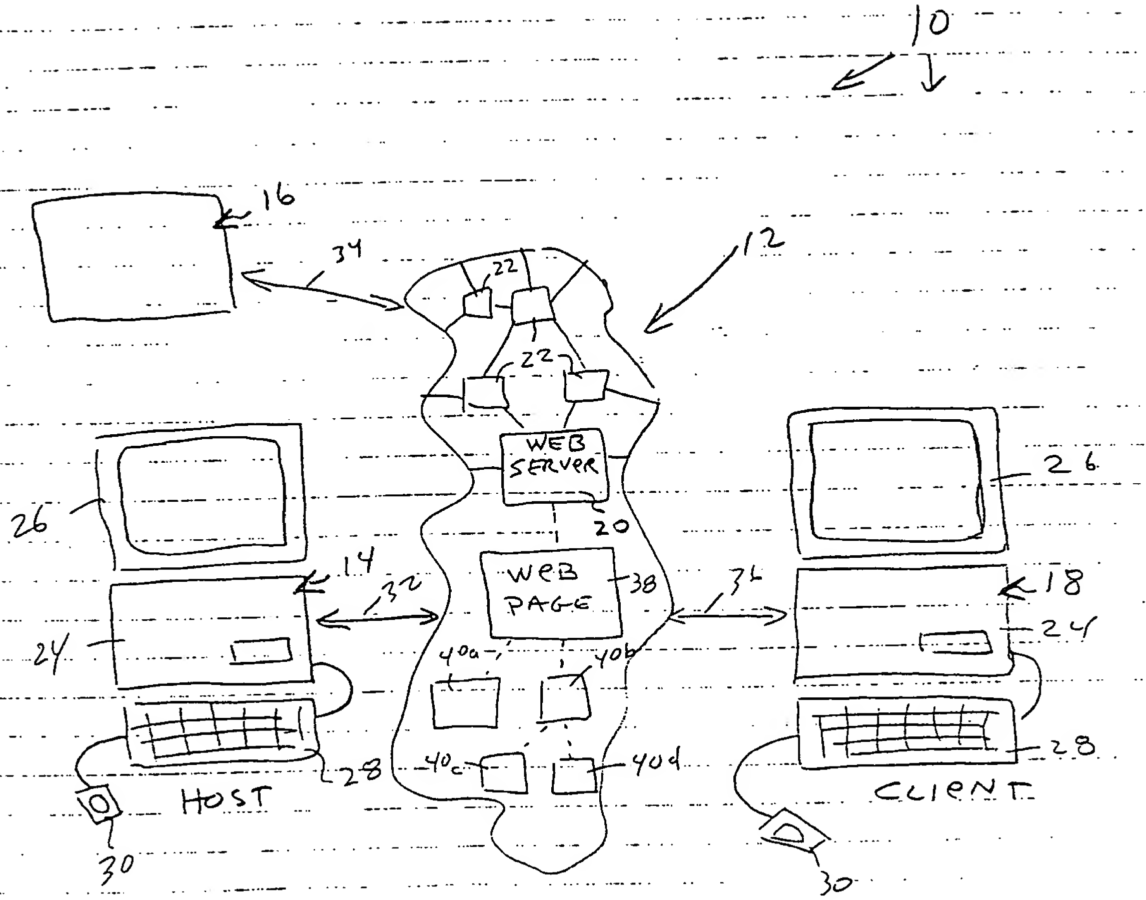

10
16
34
12
22
22
WEB SERVER
20
26
14
32
24
WEB PAGE
38
36
18
26
24
40a
40b
40c
40d
28
28
HOST
CLIENT
30
30

Fig. 1

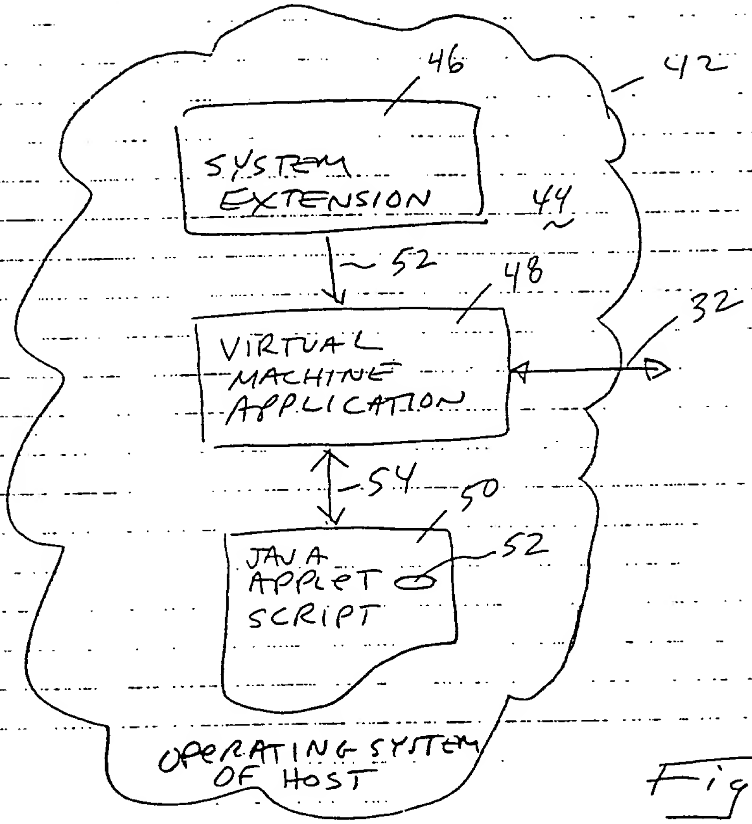

46
42
SYSTEM EXTENSION
44
52
48
32
VIRTUAL MACHINE APPLICATION
54
50
52
JAVA APPLET SCRIPT
OPERATING SYSTEM OF HOST

Fig. 2

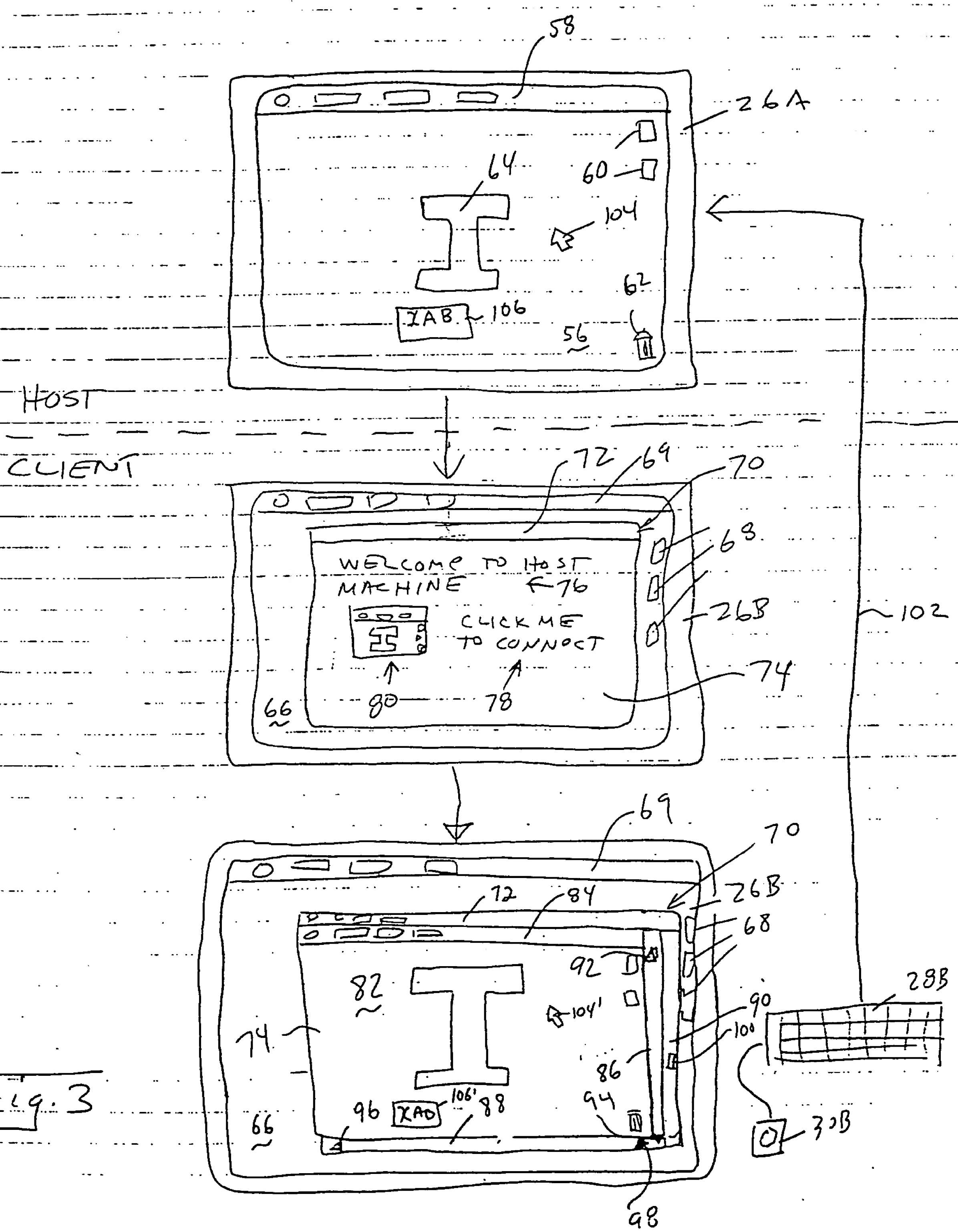

58
26A
60
64
104
62
IAB
106
56
HOST
CLIENT
72
69
70
68
WELCOME TO HOST MACHINE
76
CLICK ME TO CONNECT
26B
102
74
66
80
78
69
70
26B
72
84
68
82
92
104'
90
74
100
86
28B
66
96
XAD
106'
88
94
30B
98

Fig. 3

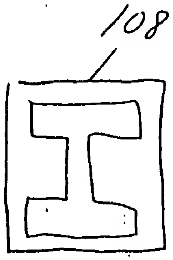


Fig 3a

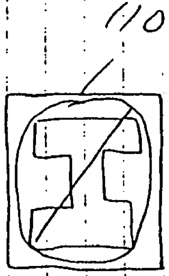


Fig 3b

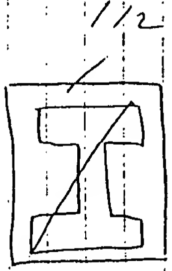


Fig 3c

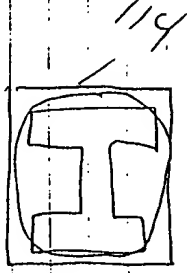


Fig 3d

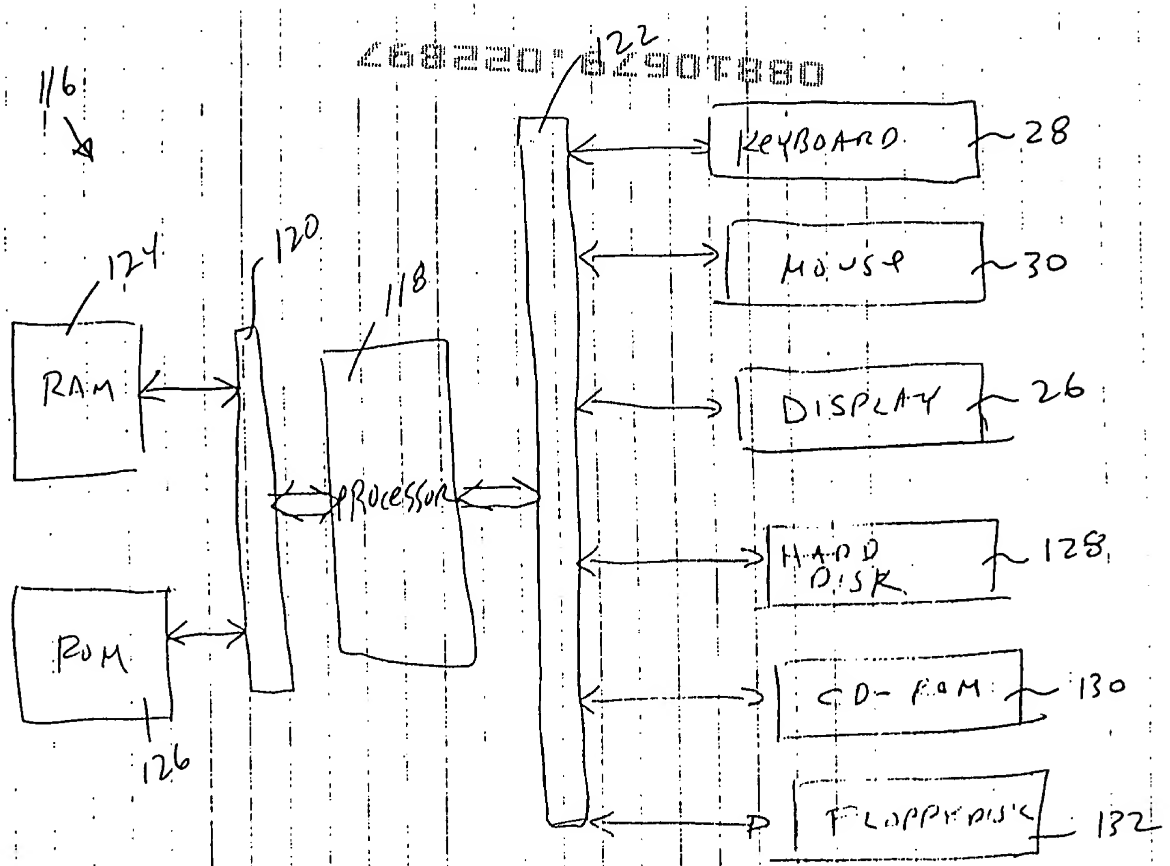

116
124
RAM
126
ROM
120
118
PROCESSOR
122
KEYBOARD
28
MOUSE
30
DISPLAY
26
HARD DISK
128
CD-ROM
130
FLOPPYDISK
132

Fig. 4

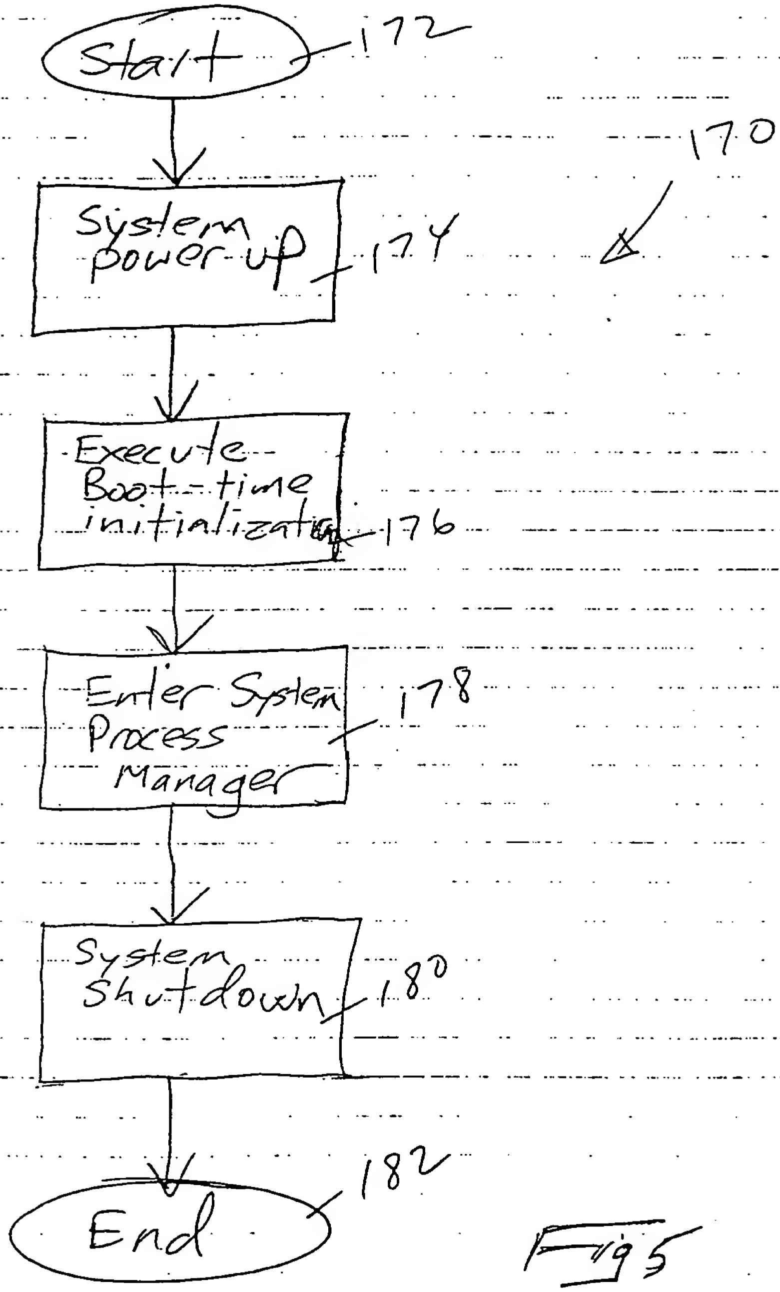

Start
172
170
System power-up
174
Execute Boot-time initialization
176
Enter System Process Manager
178
System Shutdown
180
End
182

Fig 5

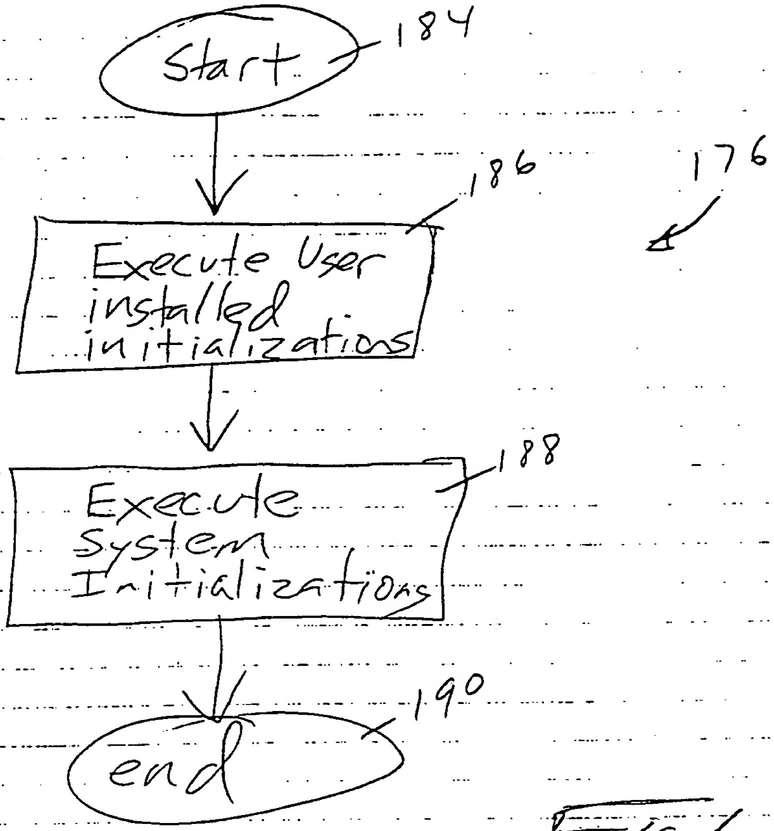
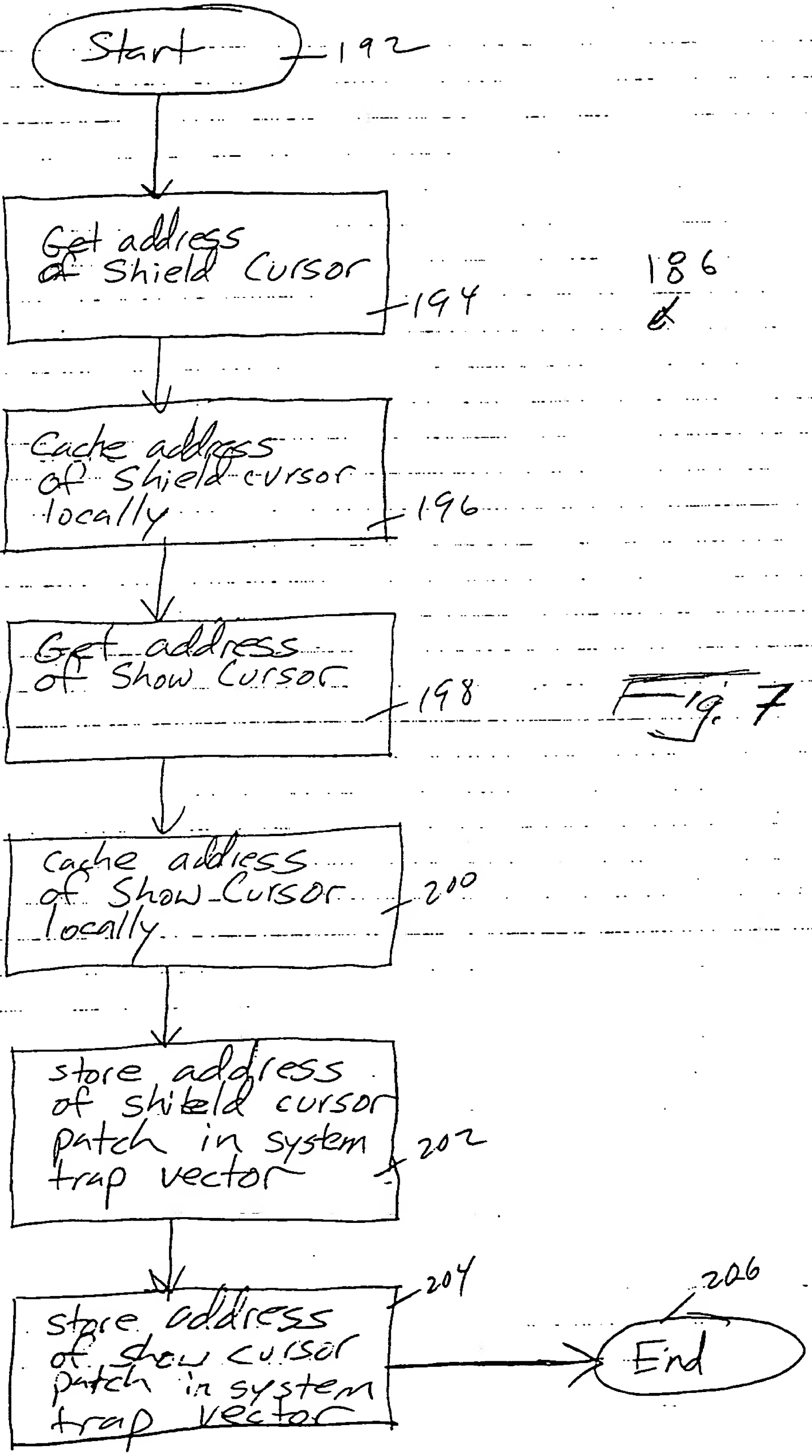

Start
184
176
186
Execute User installed initializations
188
Execute System Initializations
190
end

Fig. 6


Start
192
Get address of Shield Cursor
194
Cache address of Shield cursor locally
196
Get address of Show Cursor
198
Cache address of Show Cursor locally
200
store address of shield cursor patch in system trap vector
202
store address of show cursor patch in system trap vector
204
End
206

186

Fig. 7

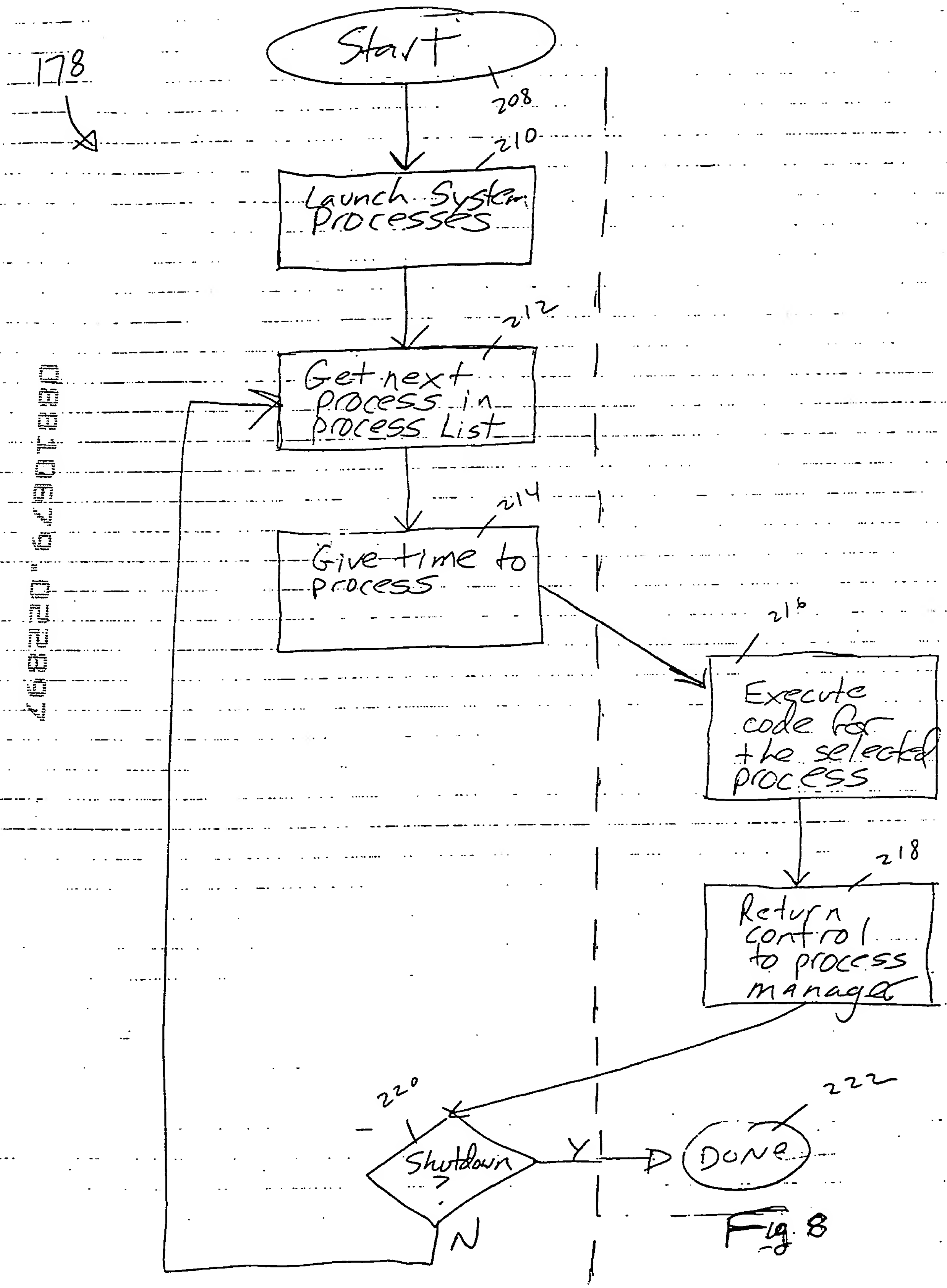
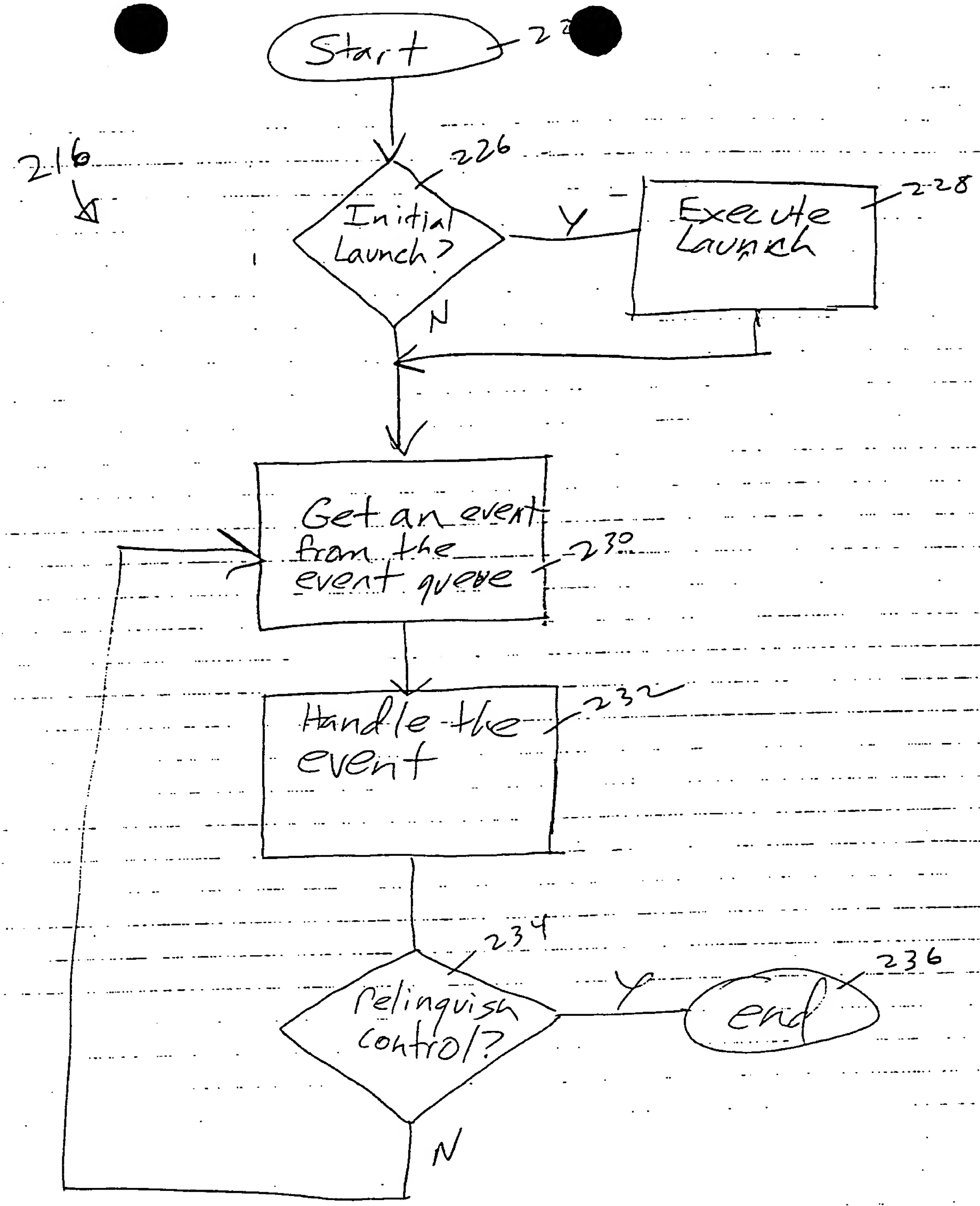

178
Start
208
210
Launch System Processes
212
Get next process in process List
214
Give time to process
216
Execute code for the selected process
218
Return control to process manager
220
Shutdown ?
Y
N
222
DONE

Fig. 8



Start
22
216
226
Initial Launch?
Y
N
Execute Launch
228
Get an event from the event queue
230
Handle the event
232
234
relinquish control?
Y
N
end
236

Fig 9

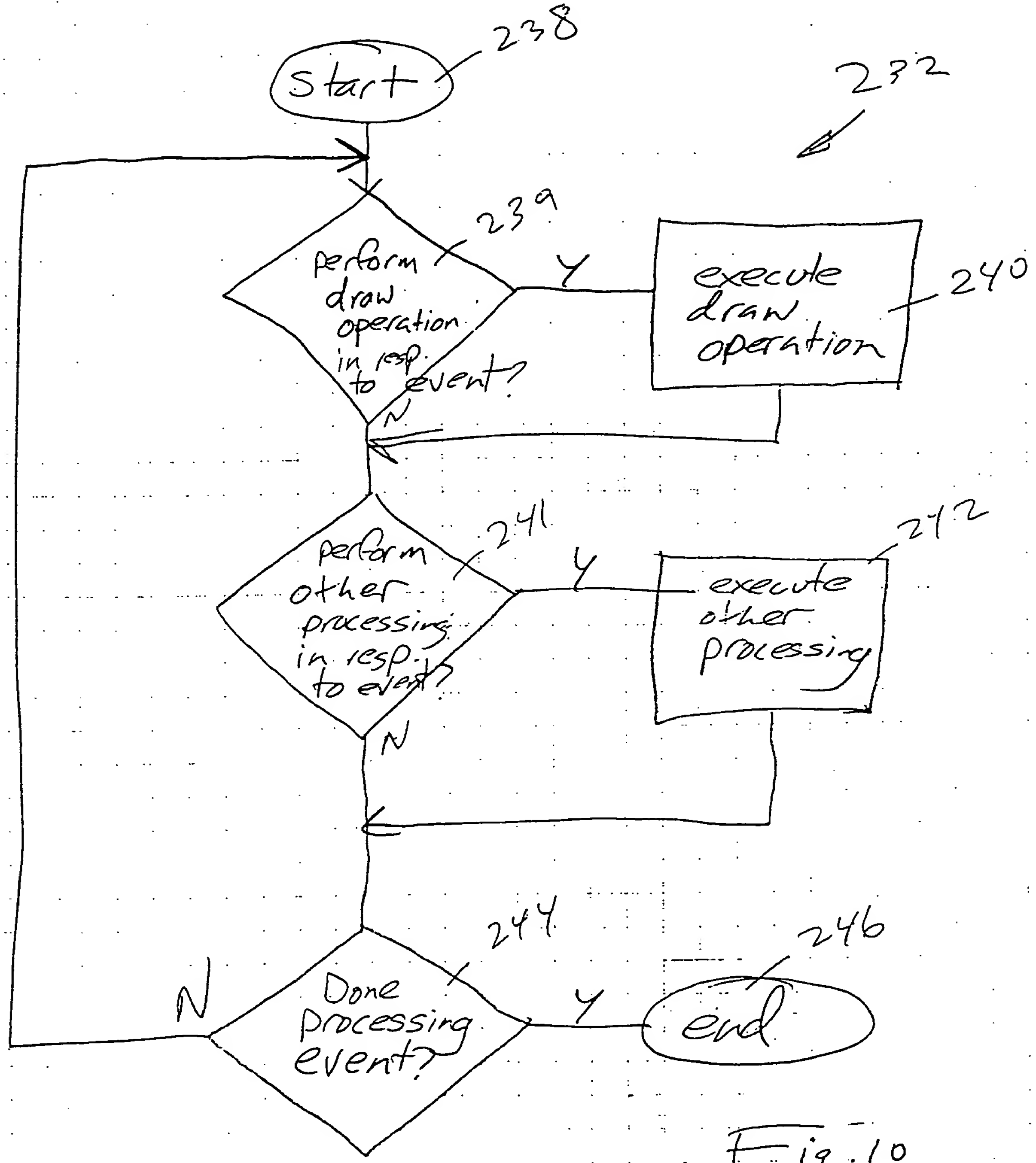

238
232
Start
perform draw operation in resp. to event?
239
Y
N
execute draw operation
240
perform other processing in resp. to event?
241
Y
N
execute other processing
242
Done processing event?
244
N
Y
end
246

Fig. 10

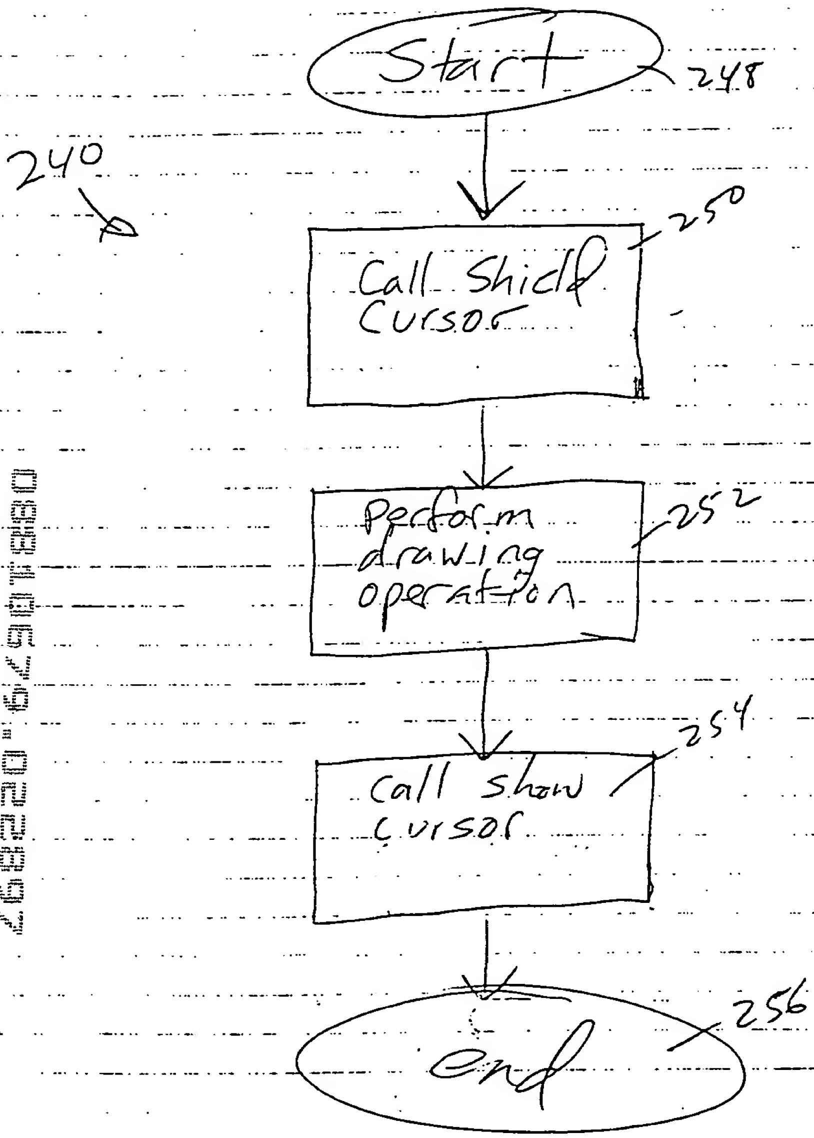
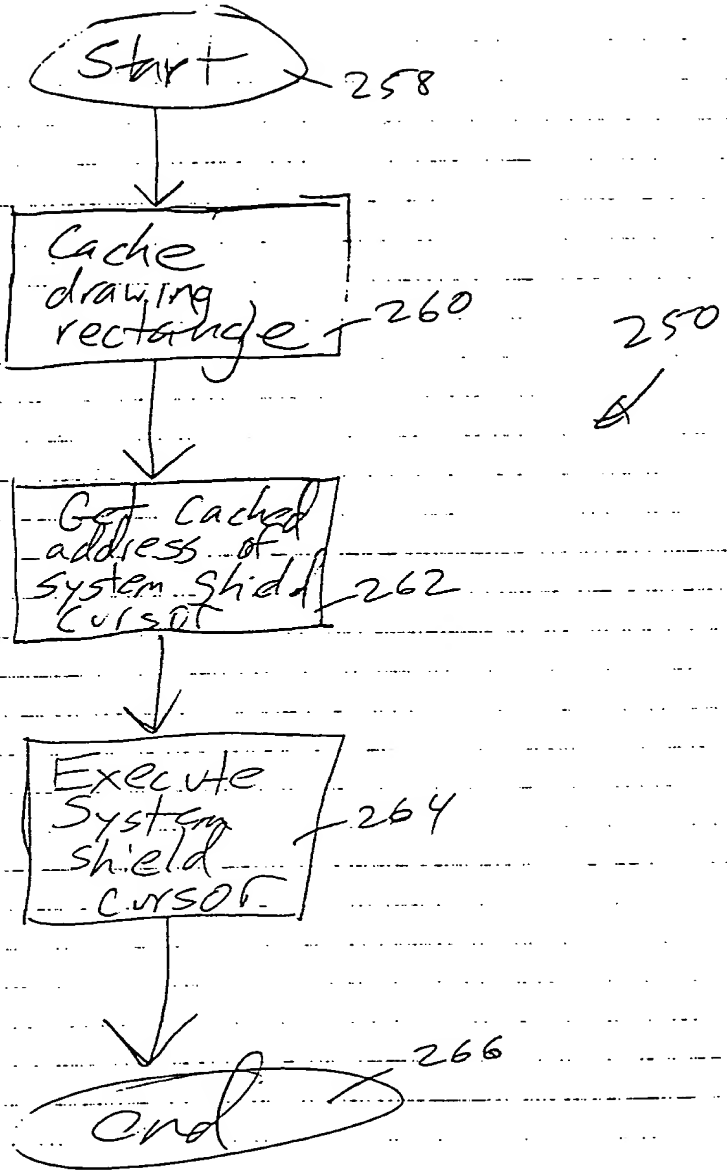
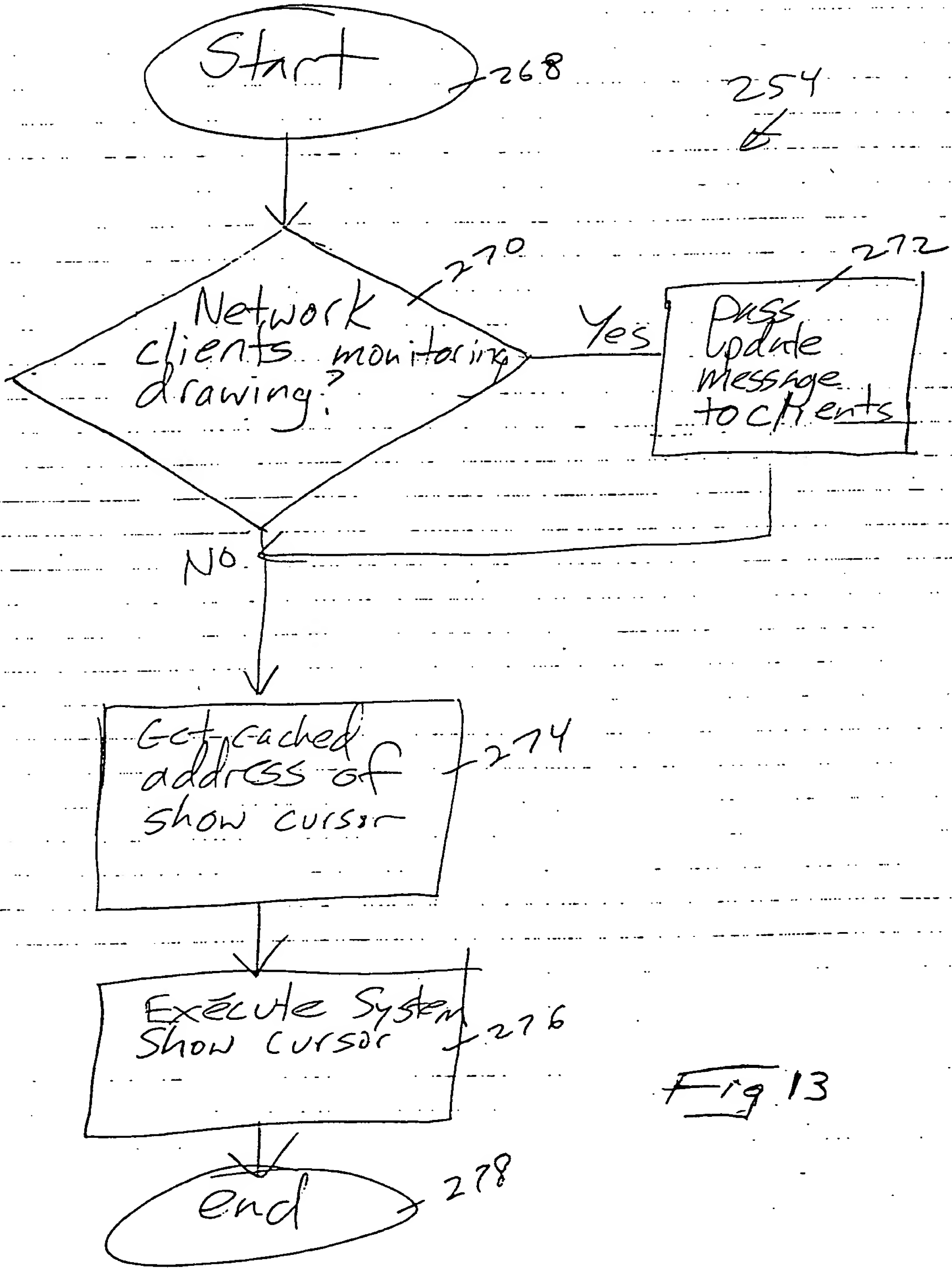

240
Start
248
Call Shield Cursor
250
Perform drawing operation
252
Call show cursor
254
end
256

Fig. 11



Start
258
Cache drawing rectangle
260
250
Get cached address of system shield cursor
262
Execute system shield cursor
264
266
end

Fig. 12



Start
268
254
Network clients monitoring drawing?
270
Yes
Pass Update message to clients
272
No
Get cached address of show cursor
274
Execute System Show cursor
276
end
278

Fig 13

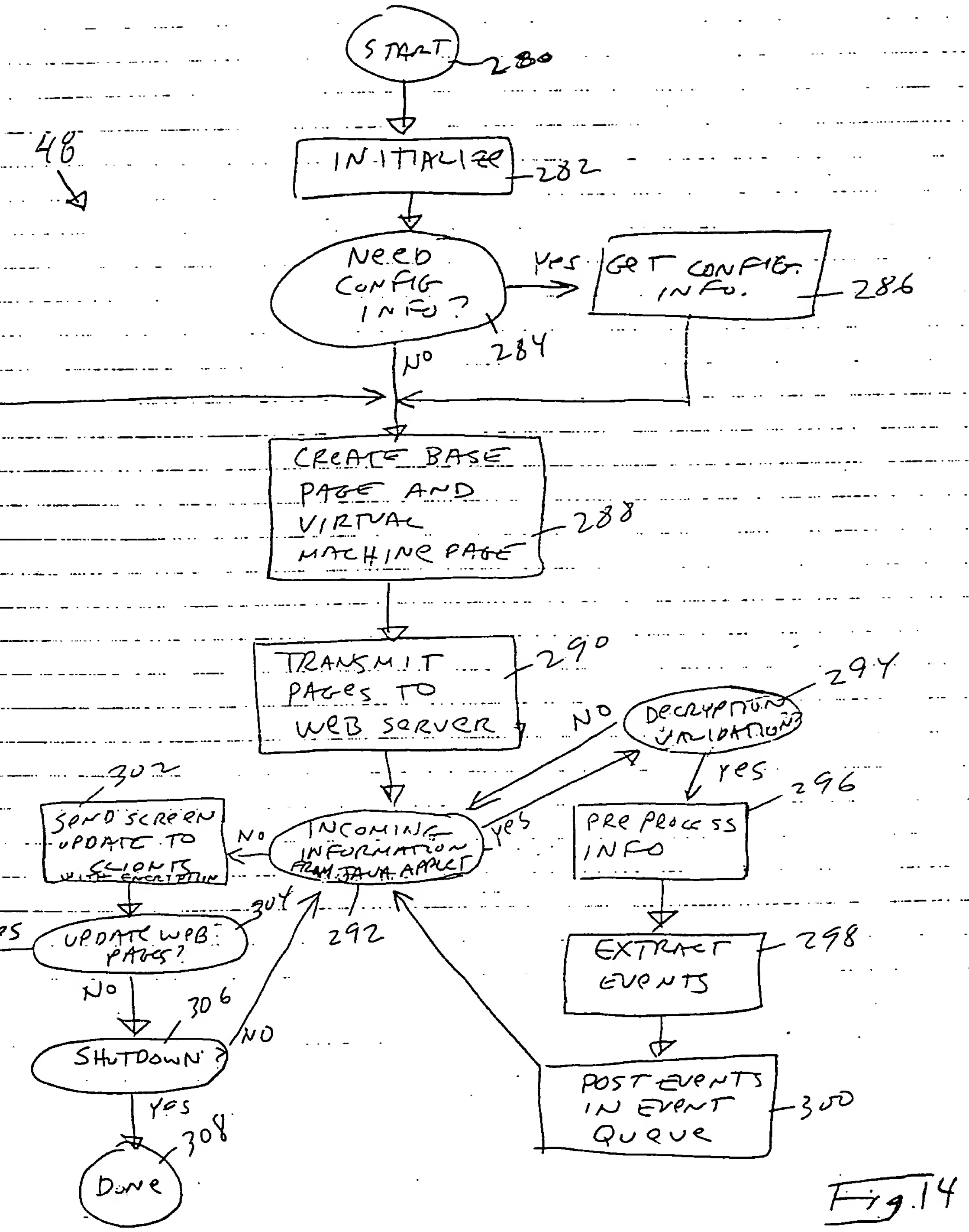

48
START
280
INITIALIZE
282
NEED CONFIG INFO?
284
YES
GET CONFIG. INFO.
286
NO
CREATE BASE PAGE AND VIRTUAL MACHINE PAGE
288
TRANSMIT PAGES TO WEB SERVER
290
DECRYPTION VALIDATION
294
NO
YES
PRE PROCESS INFO
296
EXTRACT EVENTS
298
POST EVENTS IN EVENT QUEUE
300
INCOMING INFORMATION FROM JAVA APPLET
292
YES
NO
SEND SCREEN UPDATE TO CLIENTS WITH ENCRYPTION
302
UPDATE WEB PAGES?
304
YES
NO
SHUTDOWN?
306
NO
YES
DONE
308

Fig. 14

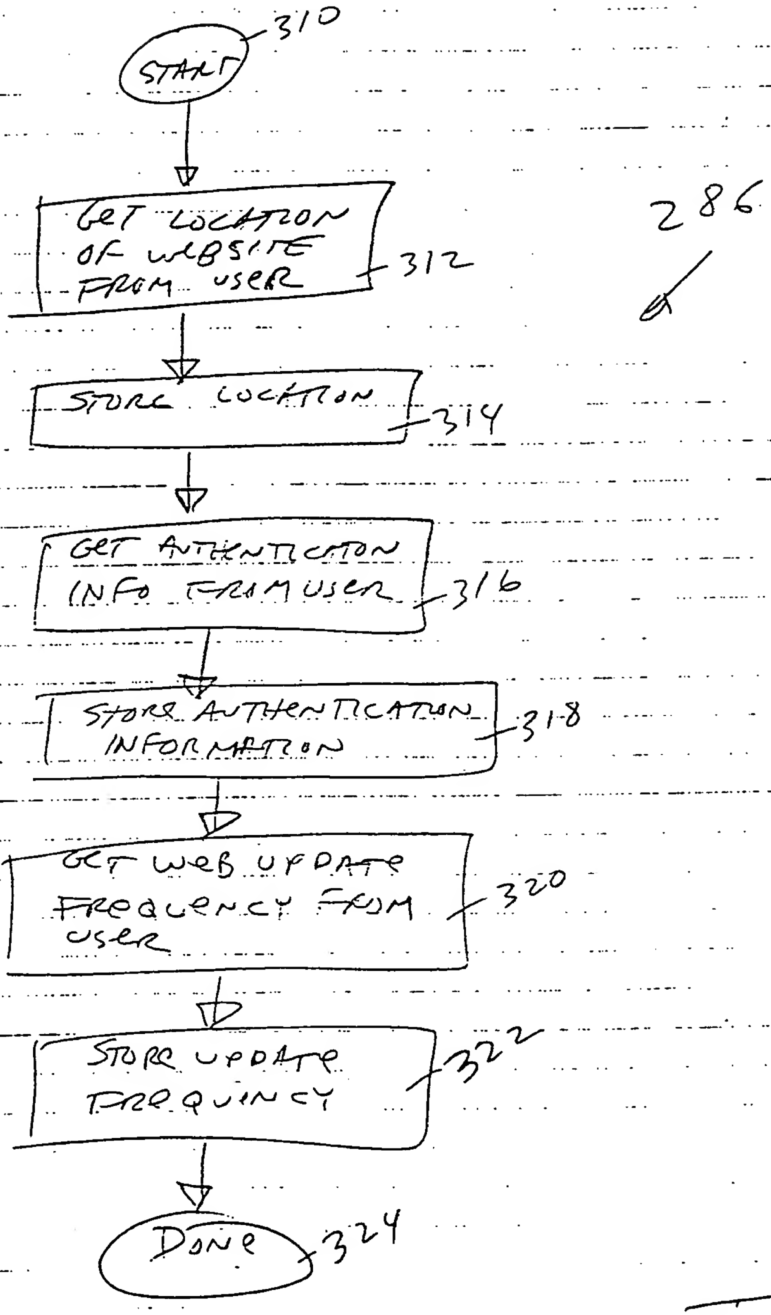

START
310
GET LOCATION OF WEBSITE FROM USER
312
STORE LOCATION
314
GET AUTHENTICATION INFO FROM USER
316
STORE AUTHENTICATION INFORMATION
318
GET WEB UPDATE FREQUENCY FROM USER
320
STORE UPDATE FREQUINCY
322
DONE
324
286

Fig. 15

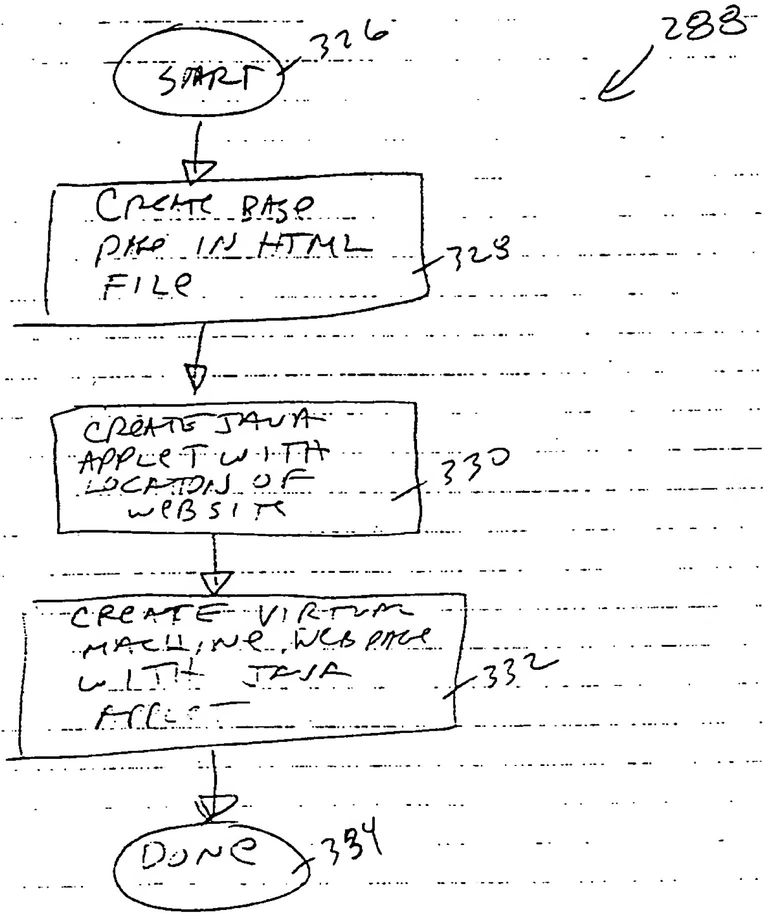

START
326
CREATE BASE PAGE IN HTML FILE
328
CREATE JAVA APPLET WITH LOCATION OF WEBSITE
330
CREATE VIRTUAL MACHINE WEB PAGE WITH JAVA APPLET
332
DONE
334
288

Fig. 16

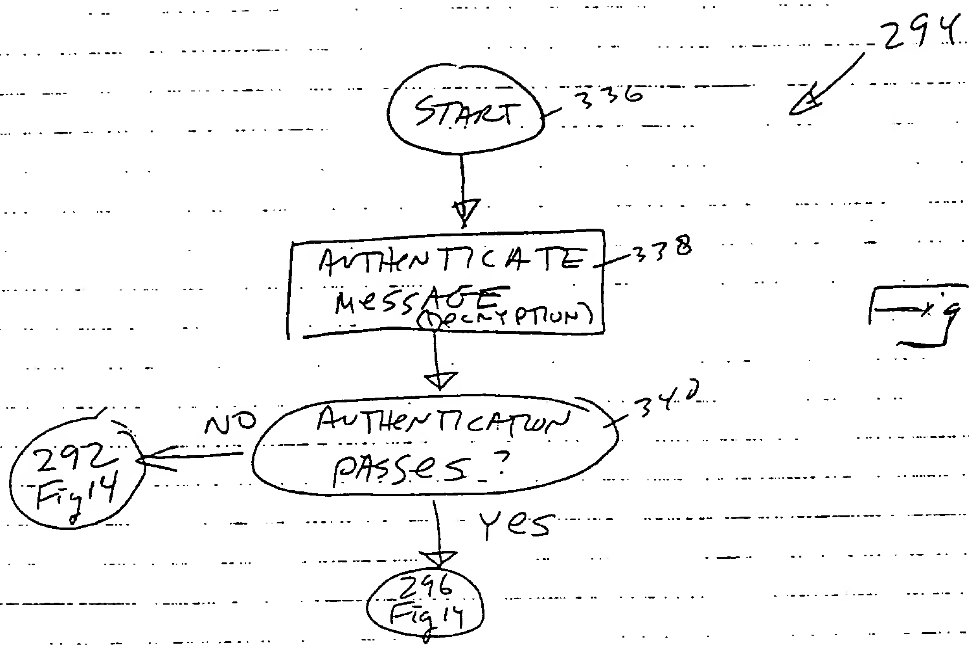

294
START
336
AUTHENTICATE MESSAGE (DECRYPTION)
338
AUTHENTICATION PASSES?
340
NO
292 Fig 14
YES
296 Fig 14

Fig. 17

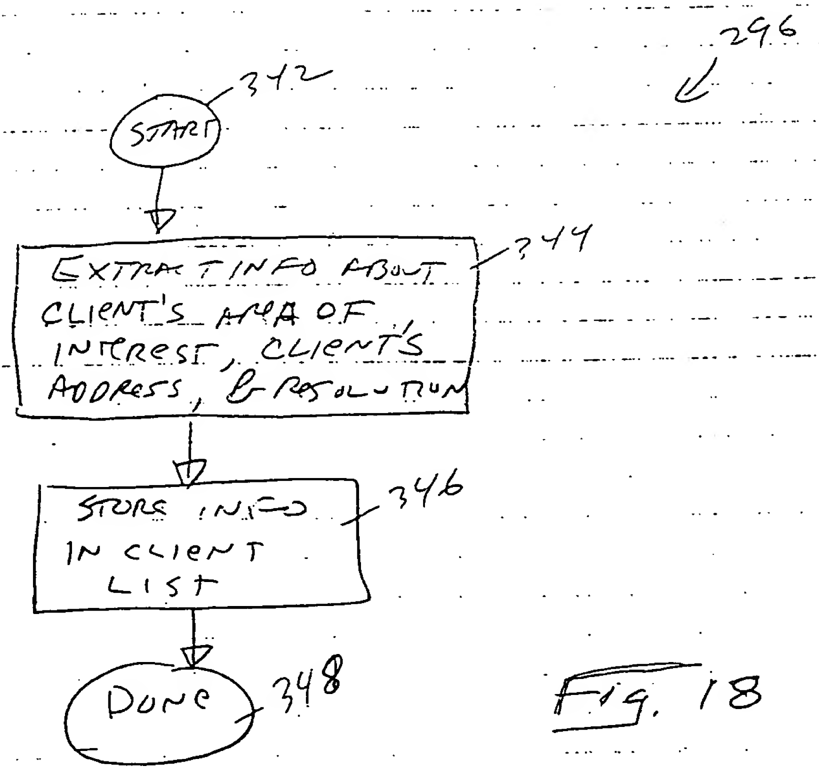

296
START
342
EXTRACT INFO ABOUT CLIENT'S AREA OF INTEREST, CLIENT'S ADDRESS, & RESOLUTION
344
STORE INFO IN CLIENT LIST
346
DONE
348

Fig. 18

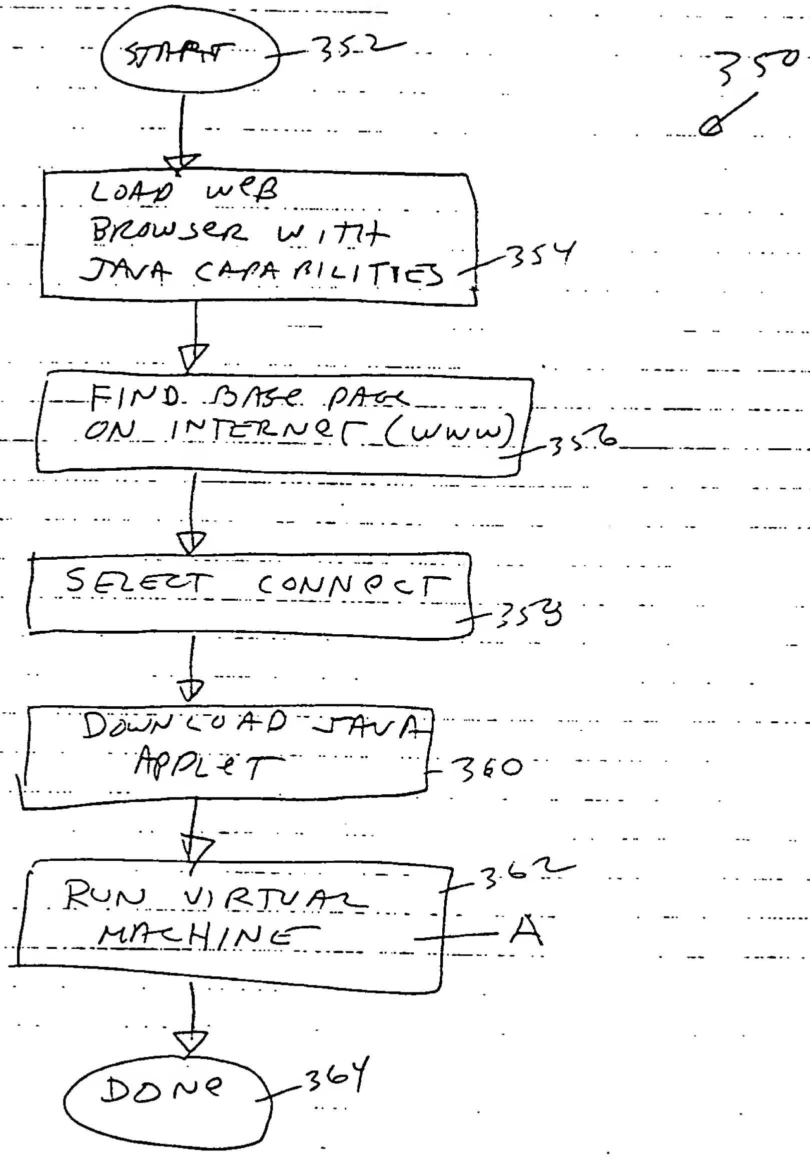

START
352
350
LOAD WEB BROWSER WITH JAVA CAPABILITIES
354
FIND BASE PAGE ON INTERNET (WWW)
356
SELECT CONNECT
358
DOWNLOAD JAVA APPLET
360
RUN VIRTUAL MACHINE
362
A
DONE
364

Fig. 19

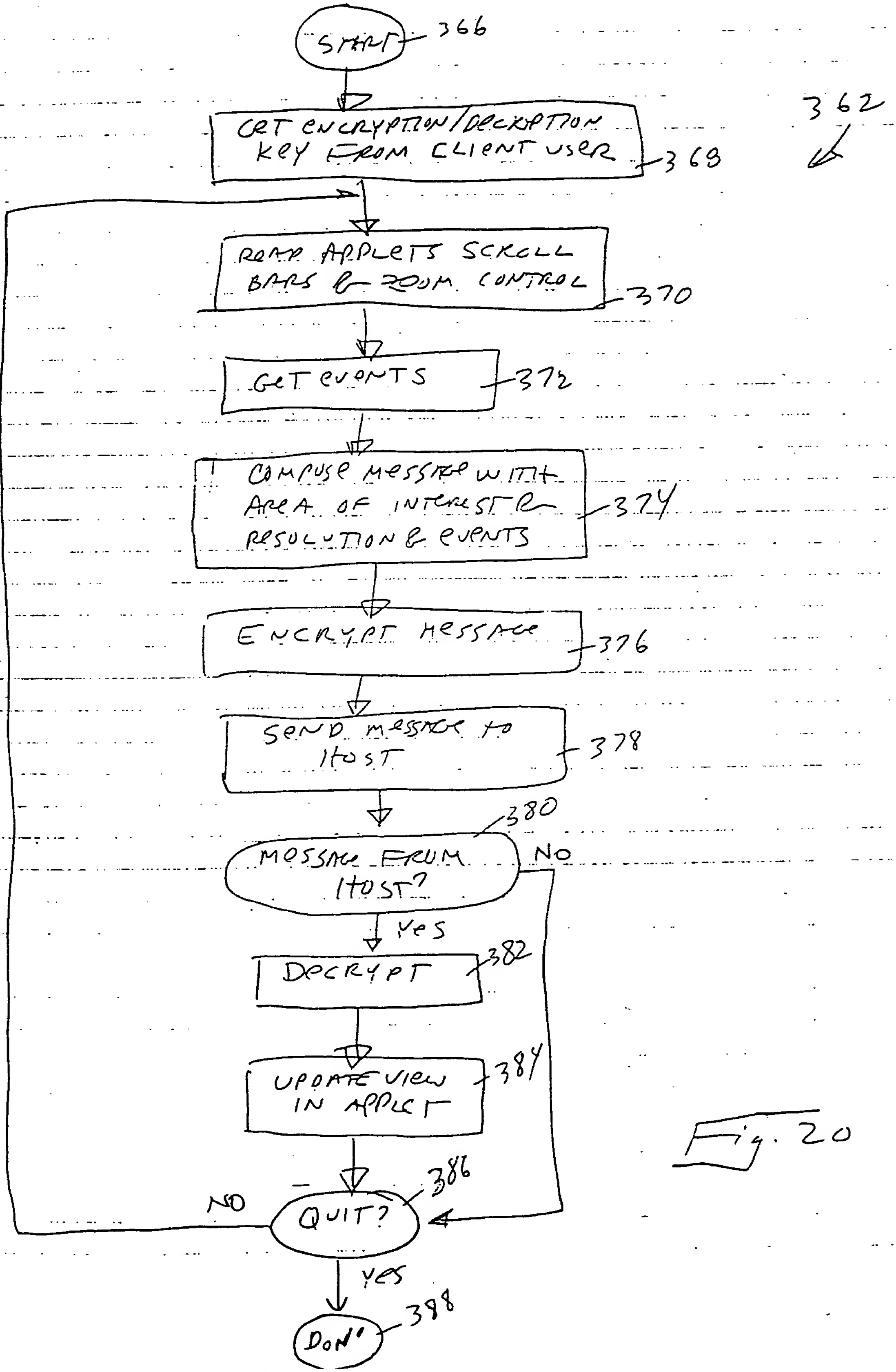

START
366
362
GET ENCRYPTION/DECRYPTION KEY FROM CLIENT USER
368
READ APPLETS SCROLL BARS & ZOOM CONTROL
370
GET EVENTS
372
COMPOSE MESSAGE WITH AREA OF INTEREST & RESOLUTION & EVENTS
374
ENCRYPT MESSAGE
376
SEND MESSAGE TO HOST
378
380
MESSAGE FROM HOST?
NO
YES
DECRYPT
382
UPDATE VIEW IN APPLET
384
386
NO
QUIT?
YES
DONE
388

Fig. 20

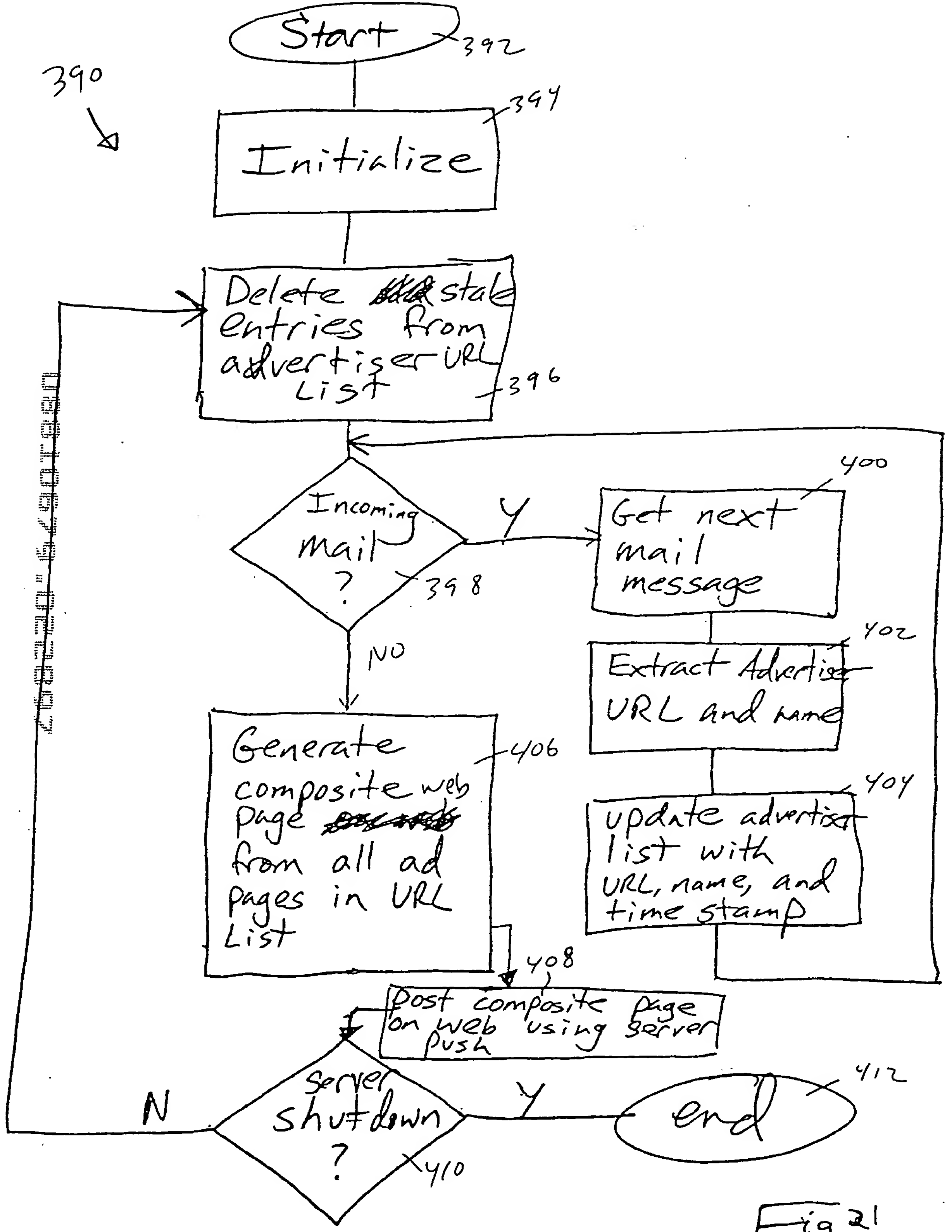
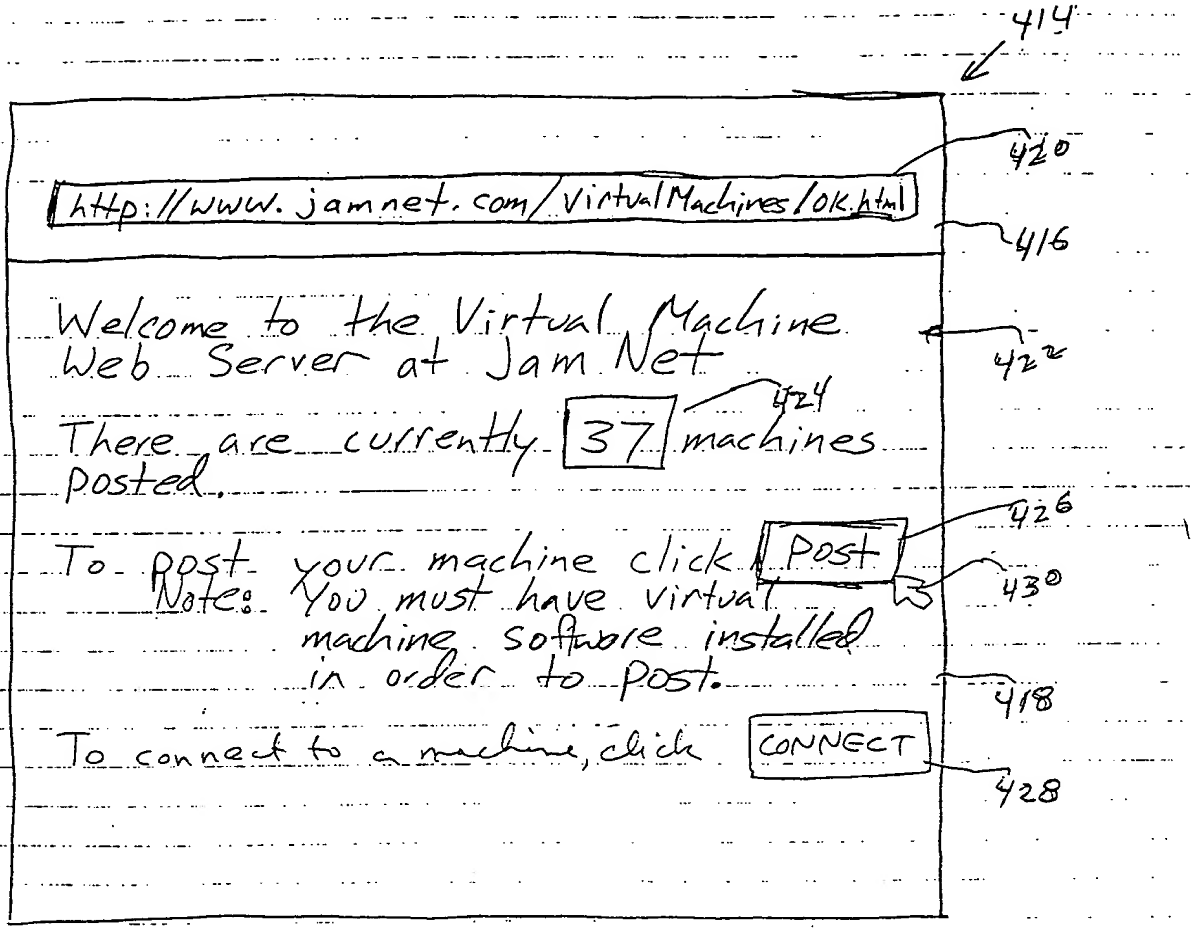

390
Start
392
Initialize
394
Delete ~~old~~ stale entries from advertiser URL List
396
Incoming mail ?
398
Y
Get next mail message
400
Extract Advertiser URL and name
402
update advertiser list with URL, name, and time stamp
404
NO
Generate composite web page ~~[illegible]~~ from all ad pages in URL List
406
408
Post composite page on web using server push
Server shutdown ?
410
N
Y
end
412

Fig. 21


http://www.jamnet.com/VirtualMachines/ok.html

Welcome to the Virtual Machine Web Server at Jam Net

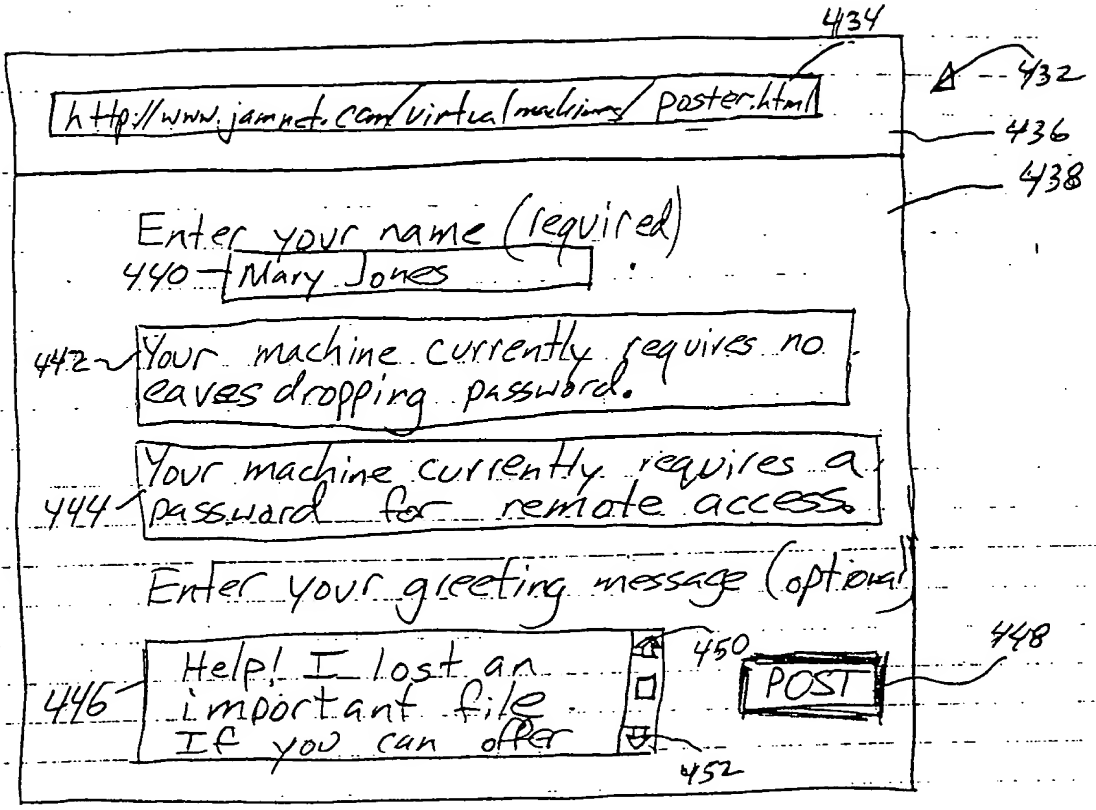
There are currently 37 machines posted.

To post your machine click Post

Note: You must have virtual machine software installed in order to post.

To connect to a machine, click CONNECT

Fig. 22a



http://www.jamnet.com/virtual machines/poster.html

Enter your name (required)

Mary Jones

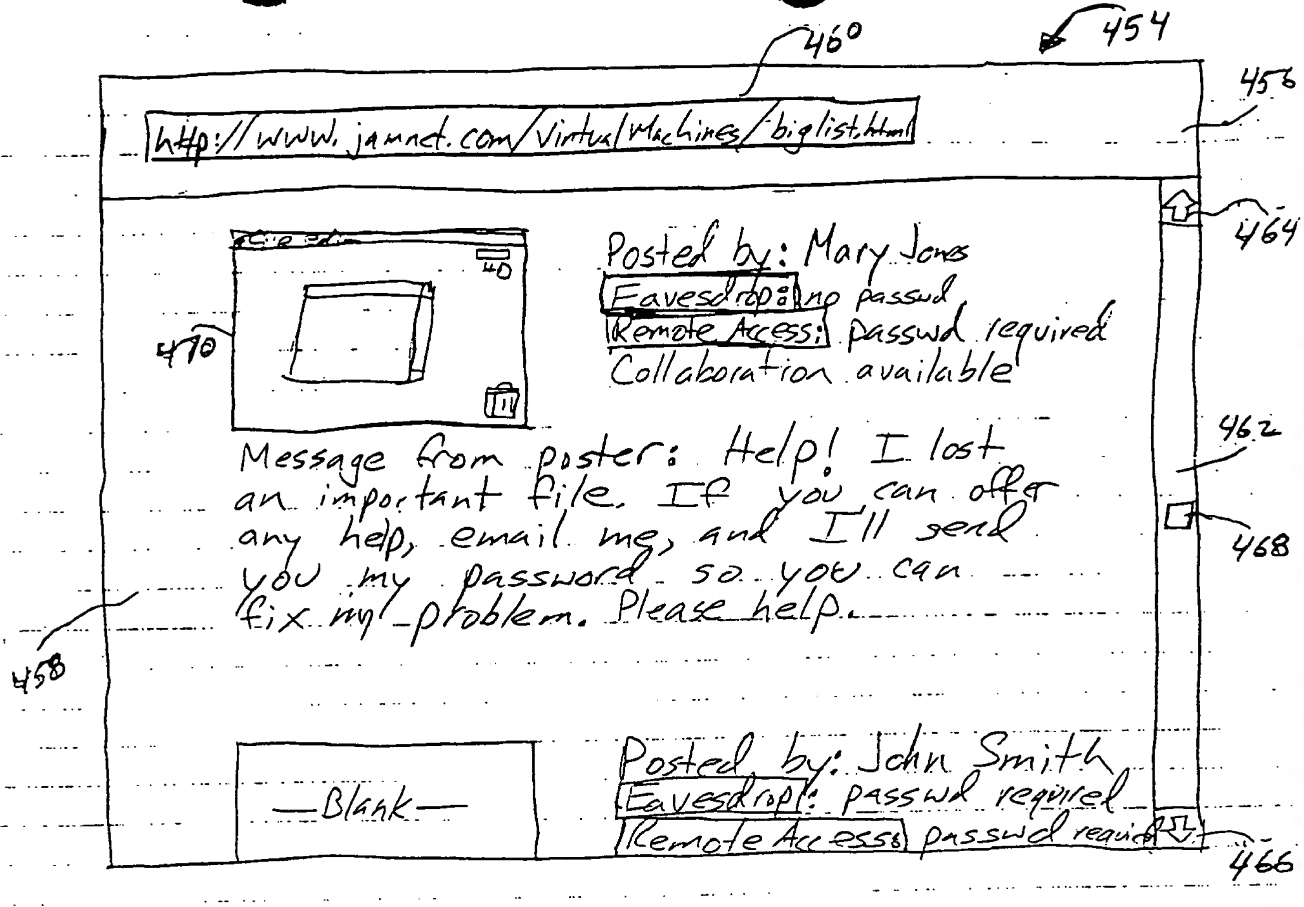
Your machine currently requires no eaves dropping password.

Your machine currently requires a password for remote access.

Enter your greeting message (optional)

Help! I lost an important file. If you can offer

Fig 22b



http://www.jamnet.com/VirtualMachines/biglist.html

Posted by: Mary Jones
Eavesdrop: no passwd
Remote Access: passwd required
Collaboration available

Message from poster: Help! I lost an important file. If you can offer any help, email me, and I'll send you my password so you can fix my problem. Please help.

Posted by: John Smith
Eavesdrop: passwd required
Remote Access: passwd required

Fig 22C

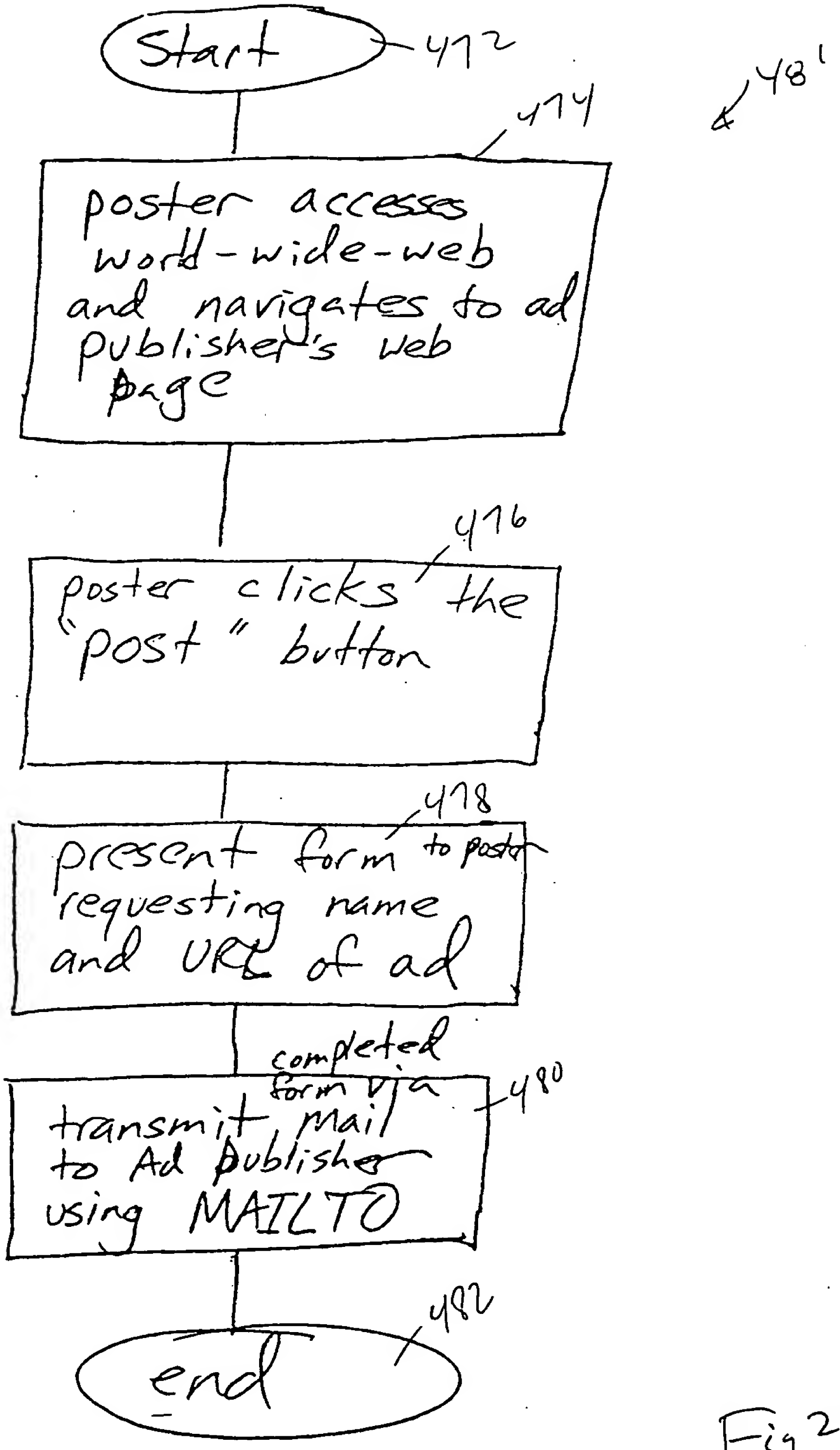

Start
472
481
474
poster accesses world-wide-web and navigates to ad publisher's web page
476
poster clicks the "post" button
478
present form to poster requesting name and URL of ad
480
transmit completed form via mail to Ad publisher using MAILTO
482
end

Fig 23

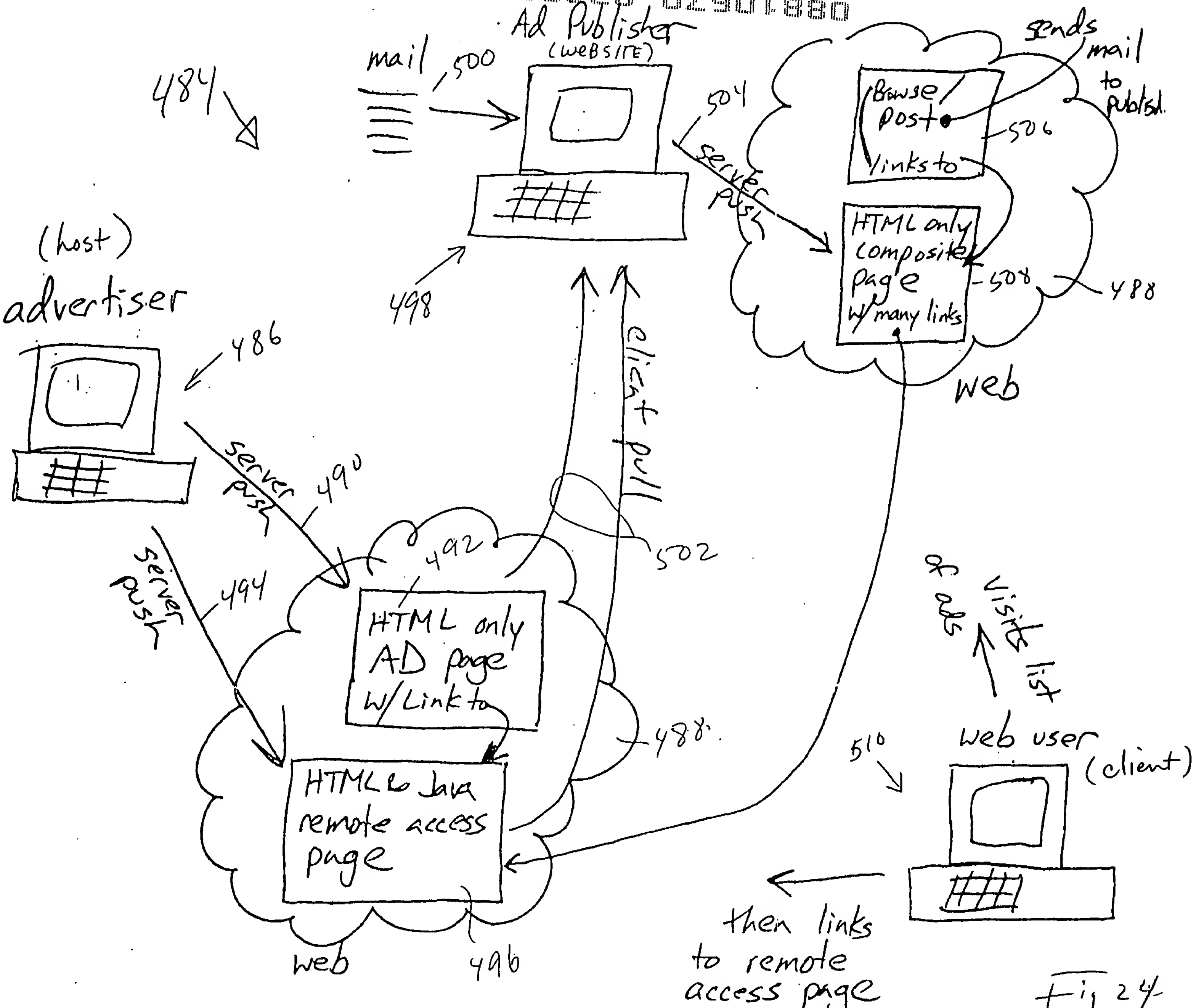

484
Ad Publisher
(WEBSITE)
mail
500
504
server push
sends mail to publsh.
Browse/post
links to
506
HTML only composite page w/many links
508
488
web
498
(host) advertiser
486
client pull
server push
490
492
502
server push
494
HTML only AD page w/Link to
488
visits list of ads
web user (client)
510
HTML to Java remote access page
web
496
then links to remote access page

Fig 24

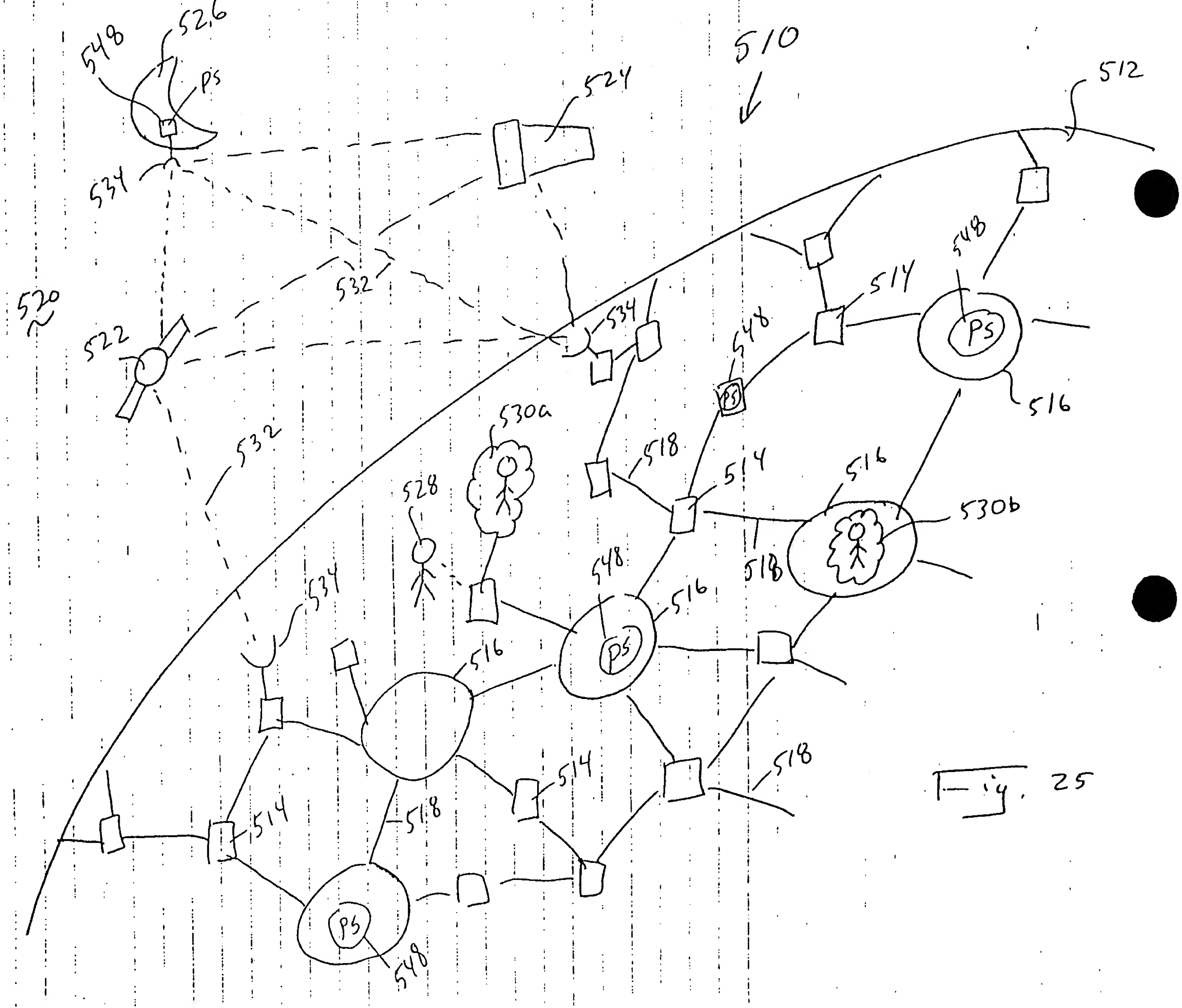

510
512
514
514
514
514
516
516
516
516
516
518
518
518
518
520
522
524
526
528
530a
530b
532
532
534
534
534
548
548
548
548
548
Ps
Ps
Ps
Ps
Ps

Fig. 25

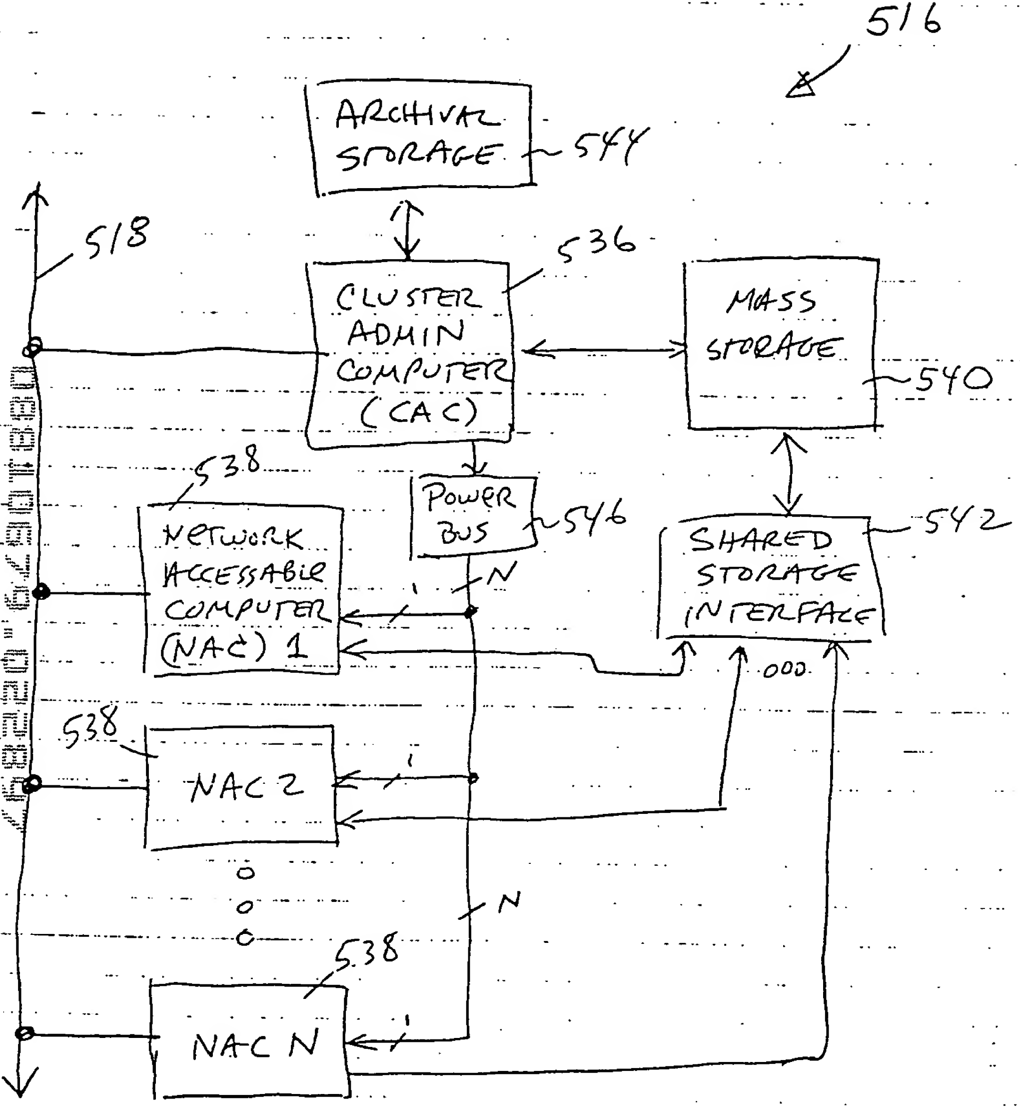

516
ARCHIVAL STORAGE
544
518
536
CLUSTER ADMIN COMPUTER (CAC)
MASS STORAGE
540
538
POWER BUS
546
542
SHARED STORAGE INTERFACE
NETWORK ACCESSABLE COMPUTER (NAC) 1
N
i
000
538
NAC 2
i
N
538
NAC N
i

Fig. 26

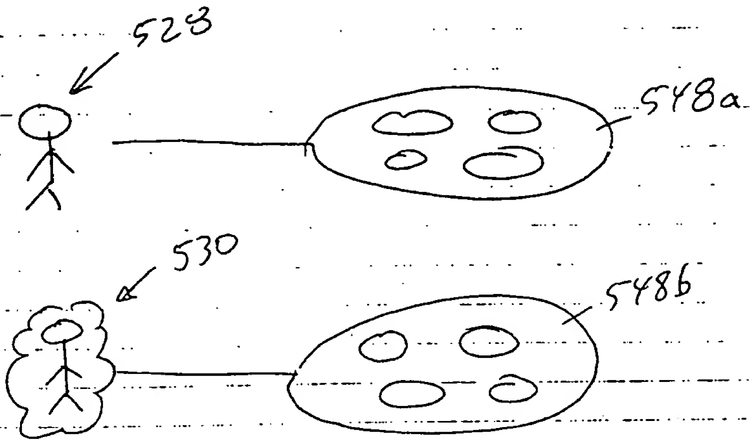

528
548a
530
548b

Fig. 27

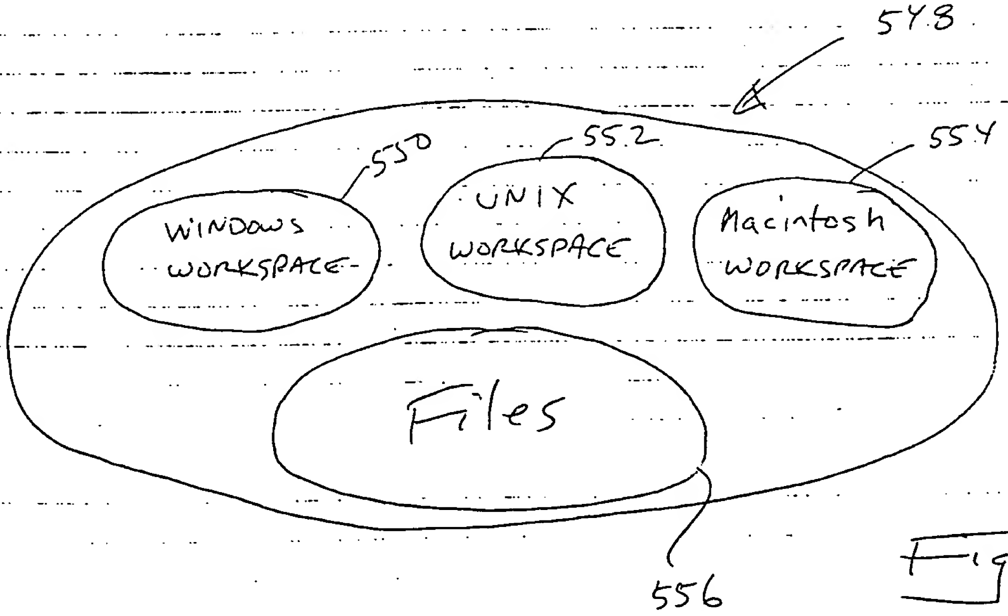
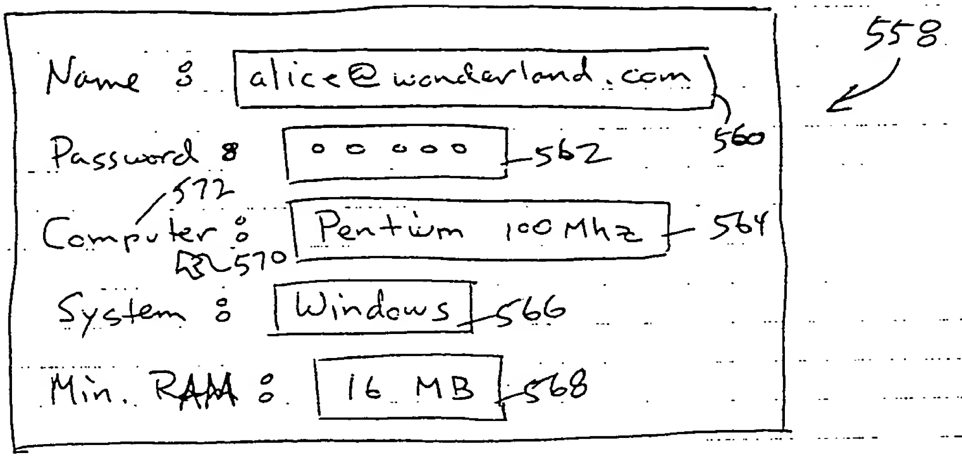

548
550
552
554
WINDOWS WORKSPACE
UNIX WORKSPACE
Macintosh WORKSPACE
Files
556

Fig. 28



Name : alice@wonderland.com

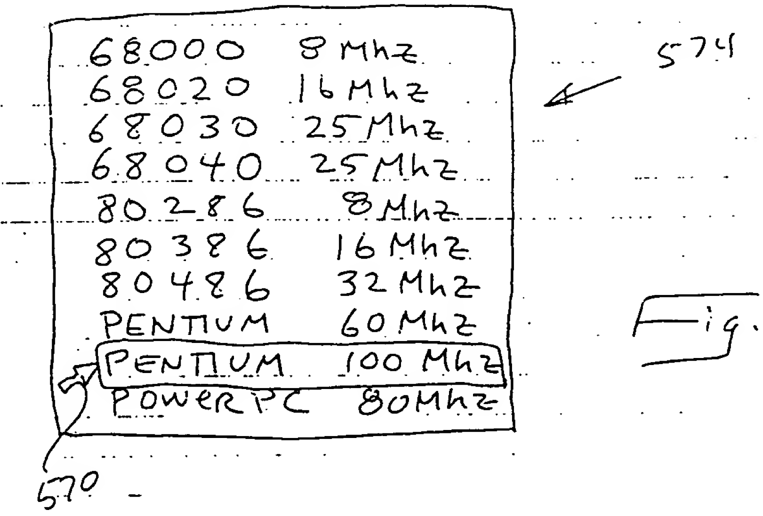
Password : ○○○○○

Computer : Pentium 100 Mhz

System : Windows

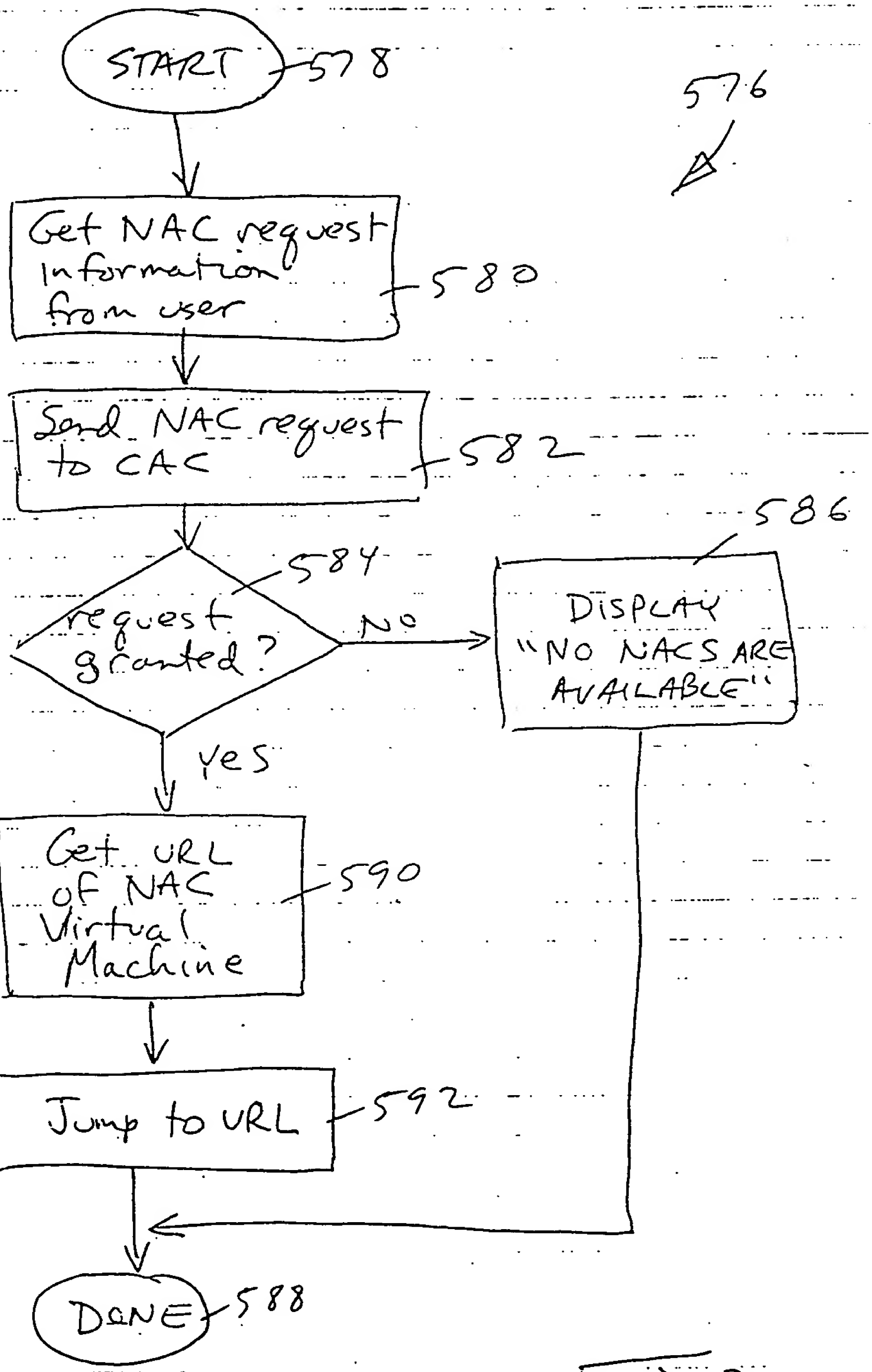
Min. ~~RAM~~ : 16 MB

Fig. 29



68000	8 Mhz
68020	16 Mhz
68030	25 Mhz
68040	25 Mhz
80286	8 Mhz
80386	16 Mhz
80486	32 Mhz
PENTIUM	60 Mhz
PENTIUM	100 Mhz
POWERPC	80 Mhz

Fig. 29a



START
578
576
Get NAC request information from user
580
Send NAC request to CAC
582
584
request granted?
NO
586
DISPLAY "NO NACS ARE AVAILABLE"
YES
Get URL of NAC Virtual Machine
590
Jump to URL
592
DONE
588

Fig. 30

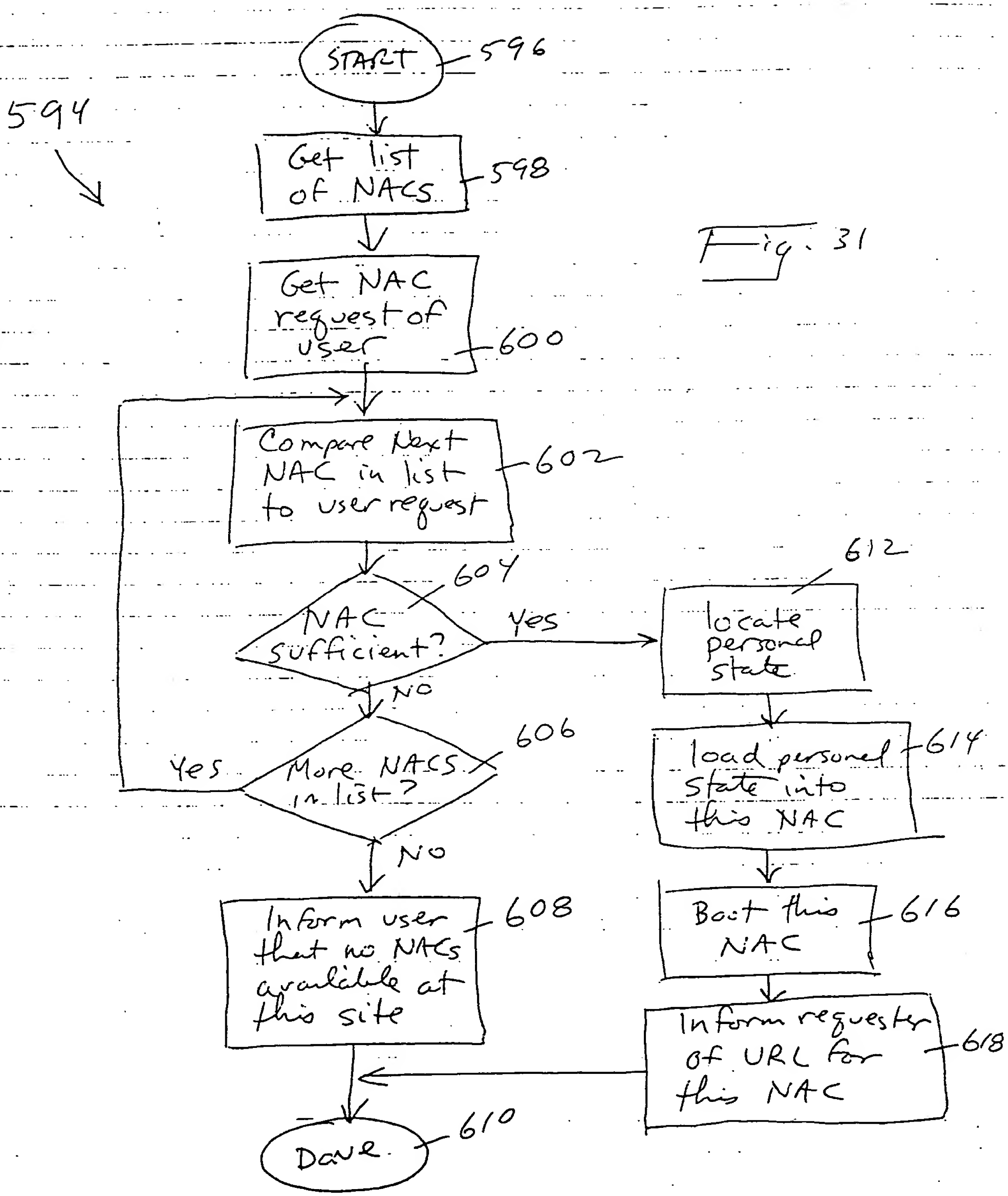

594
START
596
Get list of NACS
598
Get NAC request of user
600
Compare Next NAC in list to user request
602
NAC sufficient?
604
Yes
NO
locate personal state
612
More NACS in list?
606
Yes
NO
load personal state into this NAC
614
Inform user that no NACs available at this site
608
Boot this NAC
616
Inform requester of URL for this NAC
618
Done
610

Fig. 31

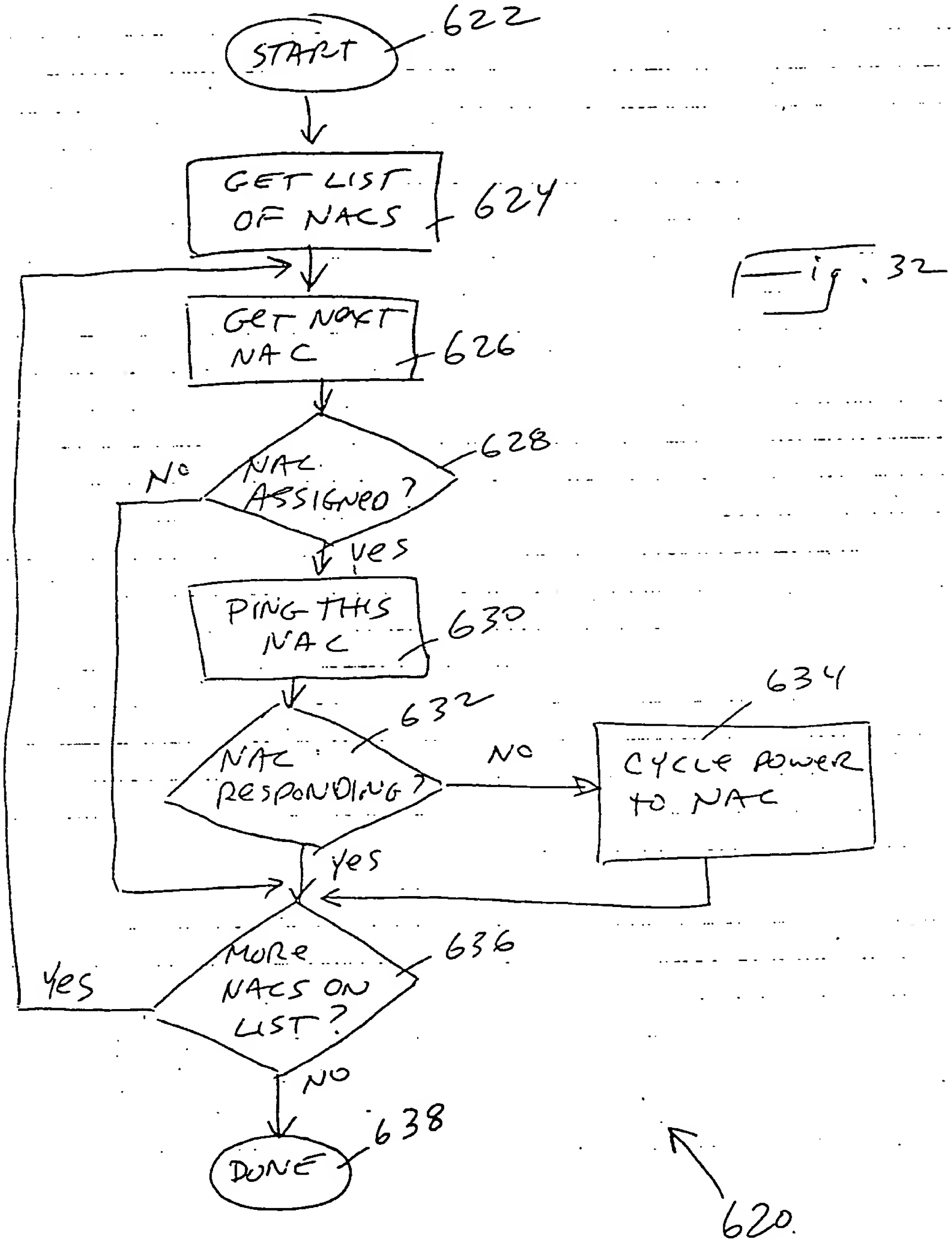

START
622
GET LIST OF NACS
624
GET NEXT NAC
626
NAC ASSIGNED?
628
NO
YES
PING THIS NAC
630
NAC RESPONDING?
632
NO
CYCLE POWER TO NAC
634
YES
MORE NACS ON LIST?
636
YES
NO
DONE
638
620

Fig. 32

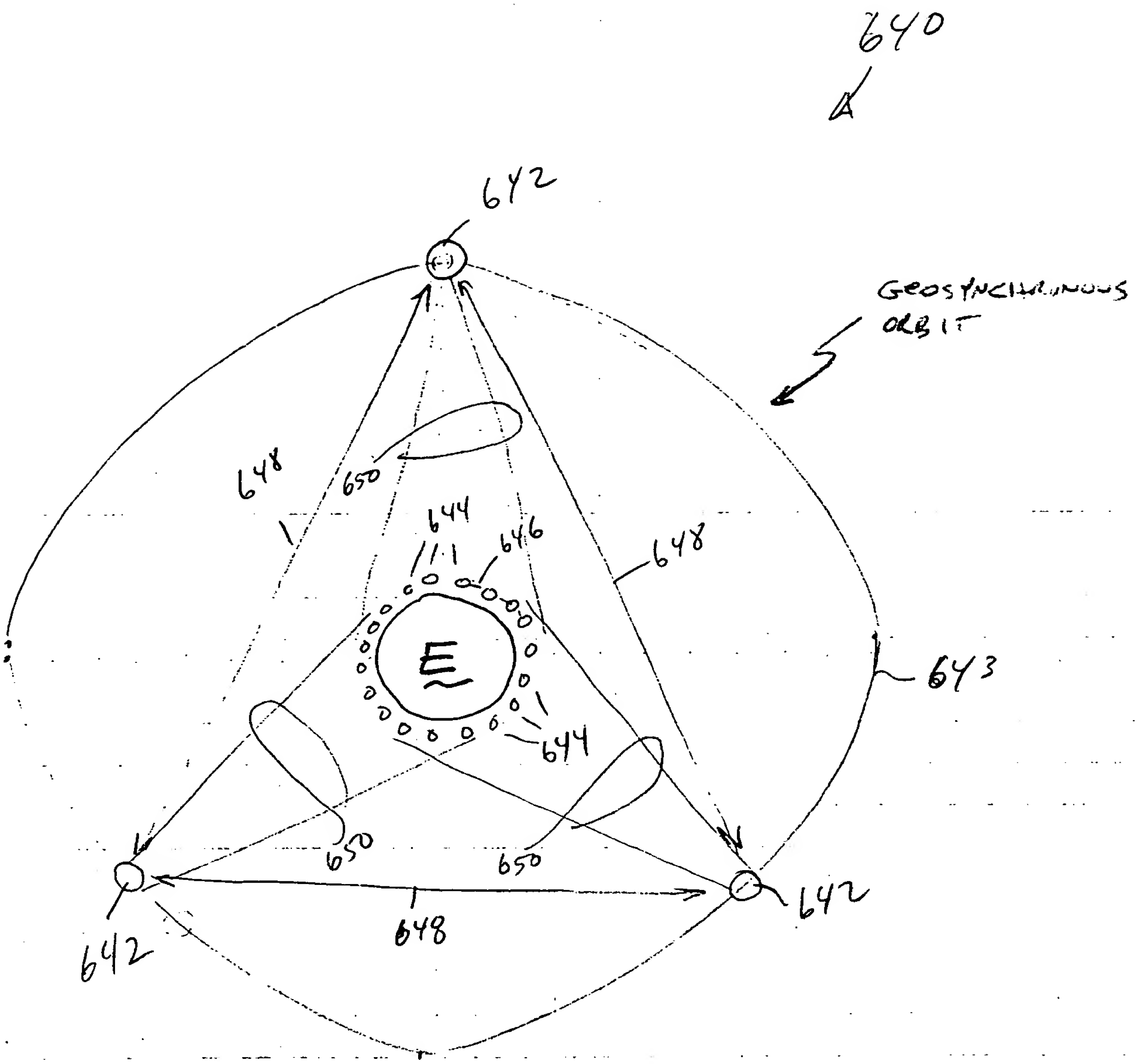

640
642
GEOSYNCHRONOUS ORBIT
648
650
644
646
648
E
643
644
650
650
642
648
642

Fig 33

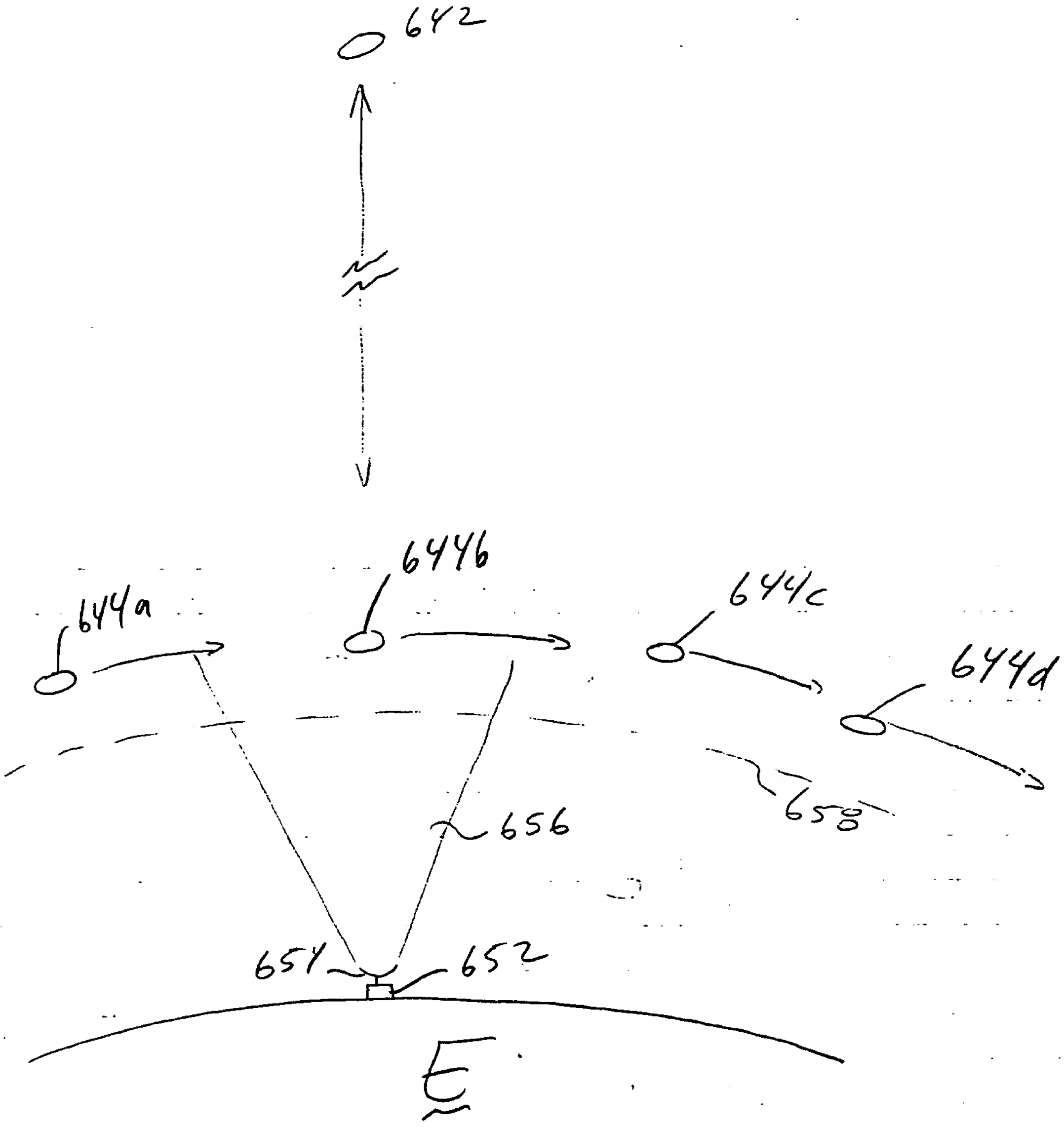


Fig. 34

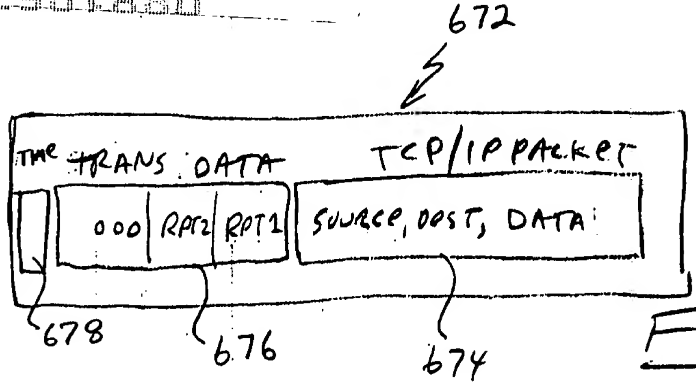


Fig. 35A

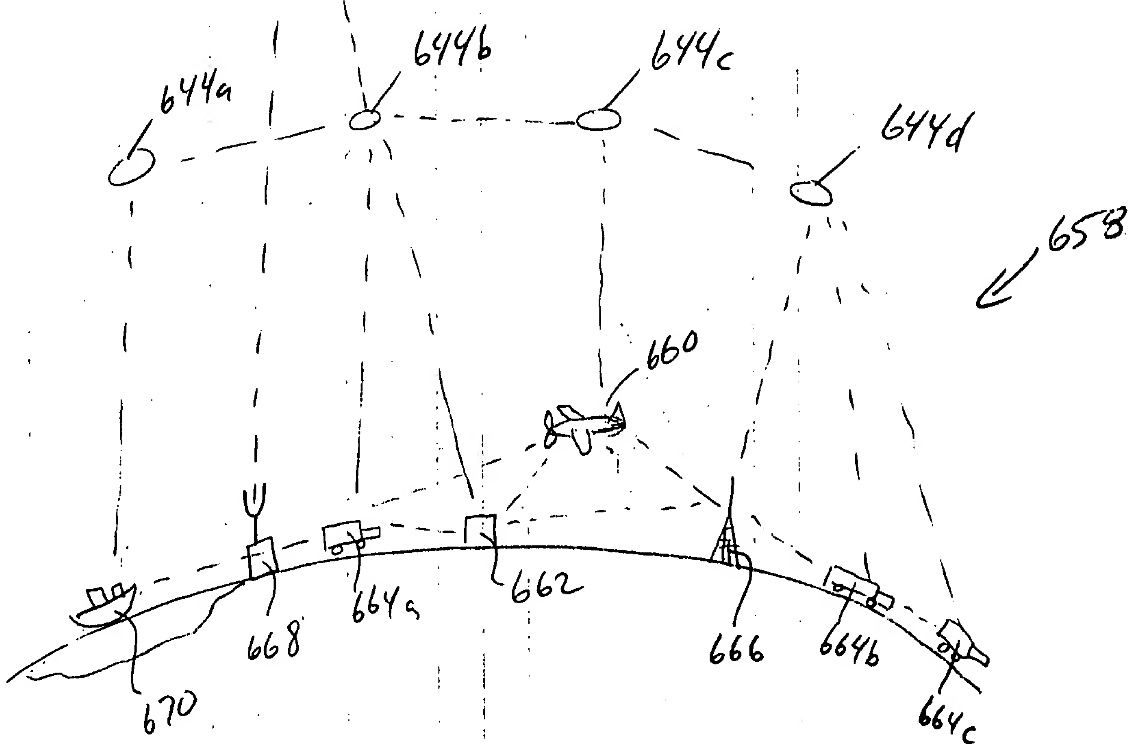


Fig. 35

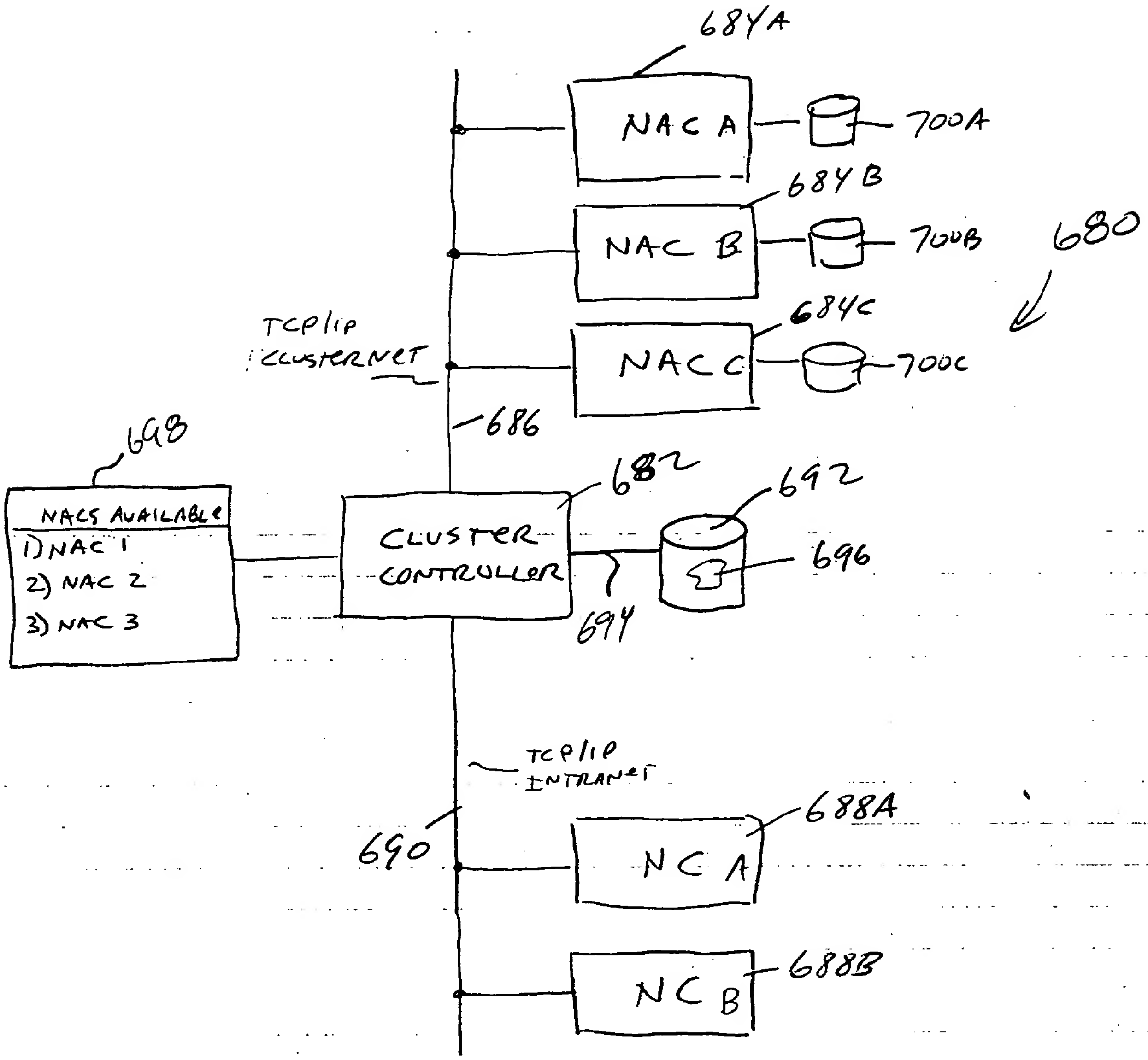

68YA
NAC A
700A
68Y B
NAC B
700B
680
684C
TCP/IP
CLUSTERNET
NAC C
700C
686
698
682
692
NACS AVAILABLE
1) NAC 1
2) NAC 2
3) NAC 3
CLUSTER CONTROLLER
696
694
TCP/IP
INTRANET
690
688A
NC A
688B
NC B

Fig. 36

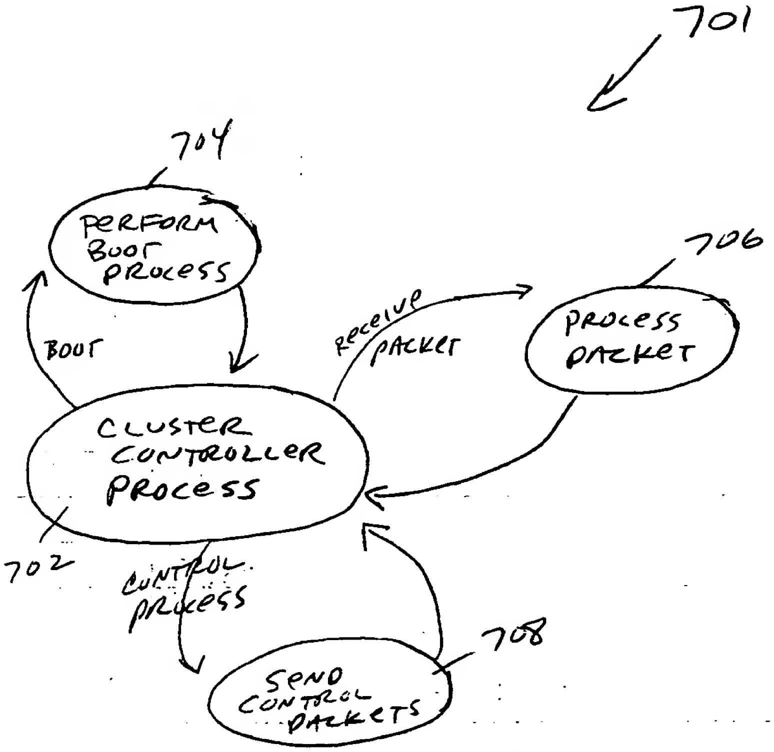

701
704
PERFORM BOOT PROCESS
706
RECEIVE PACKET
PROCESS PACKET
BOOT
CLUSTER CONTROLLER PROCESS
702
CONTROL PROCESS
708
SEND CONTROL PACKETS

Fig. 37

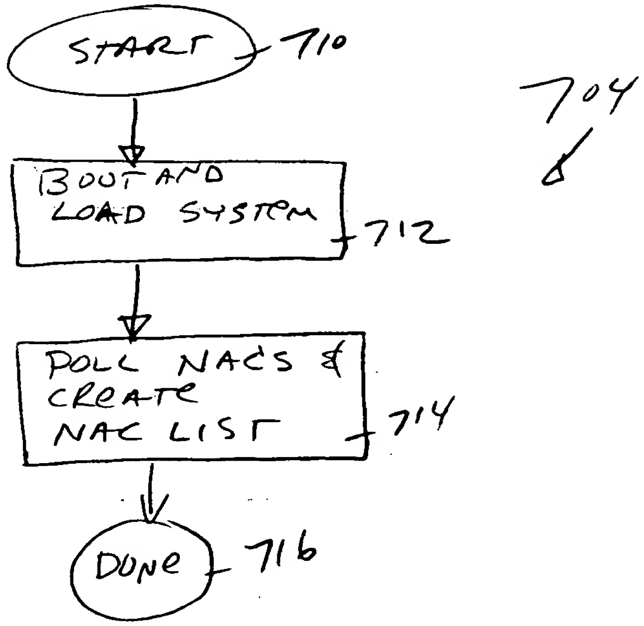

START
710
704
BOOT AND LOAD SYSTEM
712
POLL NAC'S & CREATE NAC LIST
714
DONE
716

Fig. 38

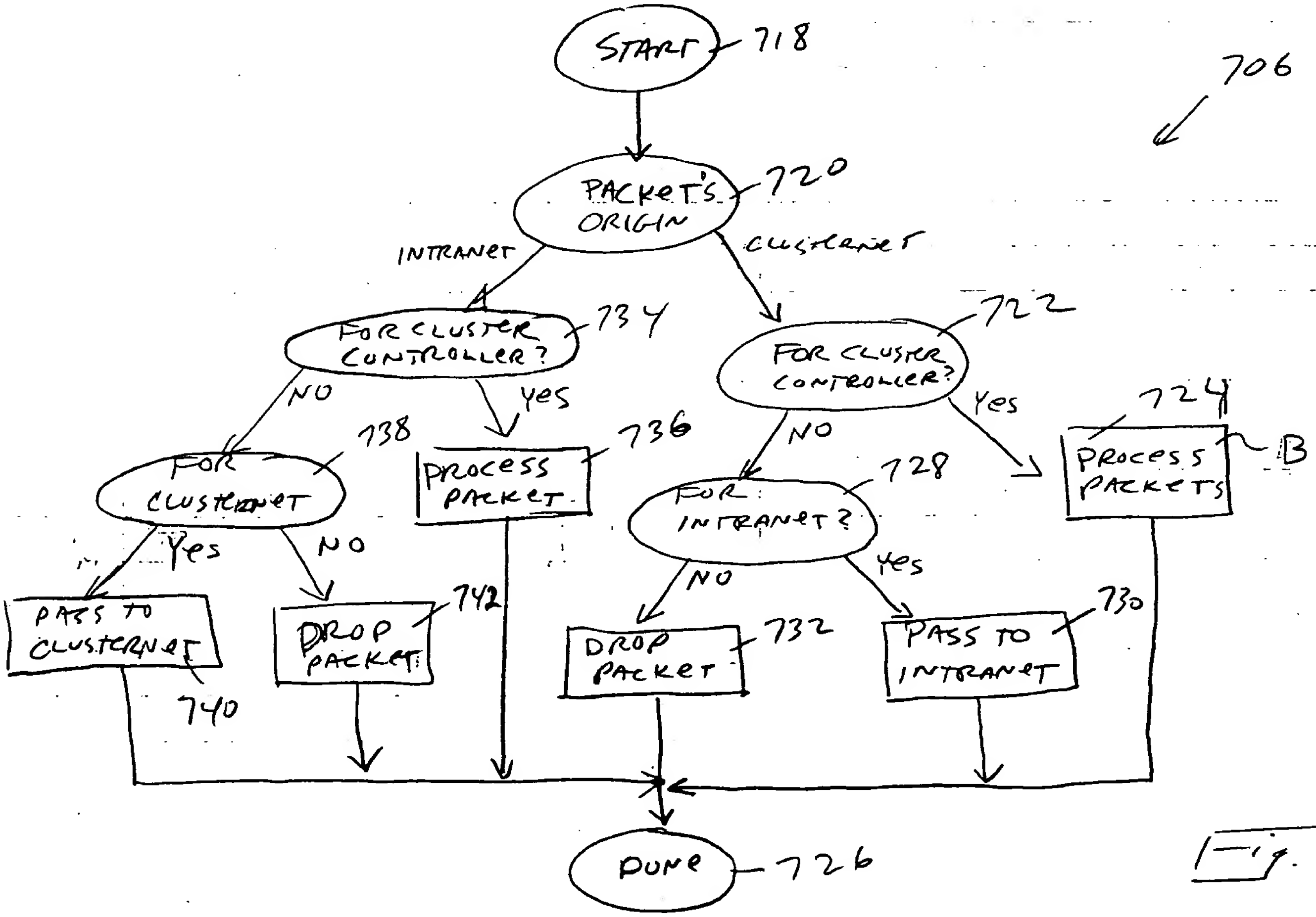

START
718
706
PACKET'S ORIGIN
720
INTRANET
CLUSTERNET
FOR CLUSTER CONTROLLER?
734
FOR CLUSTER CONTROLLER?
722
NO
YES
YES
724
B
FOR CLUSTERNET
738
PROCESS PACKET
736
NO
PROCESS PACKETS
FOR INTRANET?
728
YES
NO
NO
YES
PASS TO CLUSTERNET
740
DROP PACKET
742
DROP PACKET
732
PASS TO INTRANET
730
DONE
726

Fig. 39

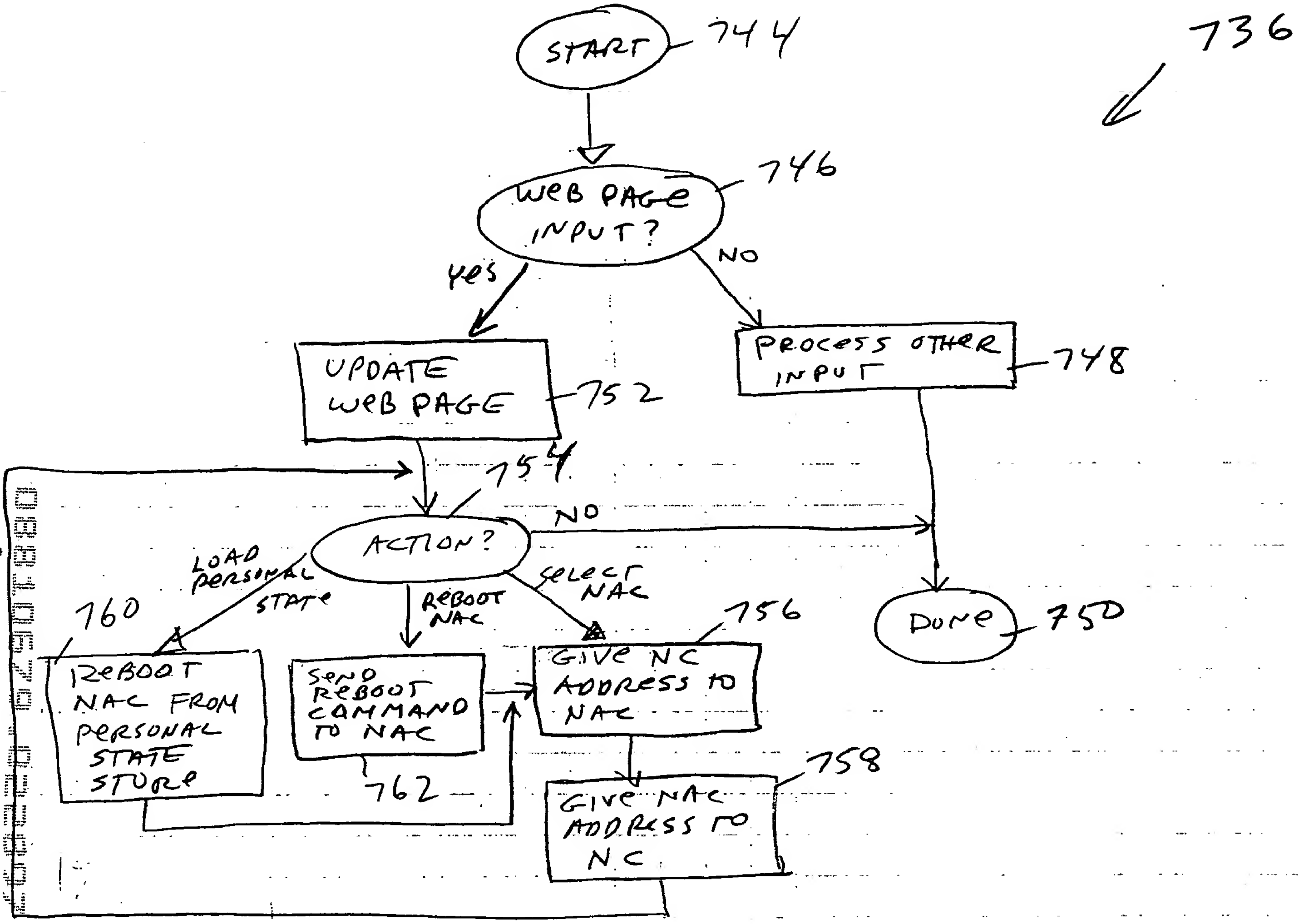
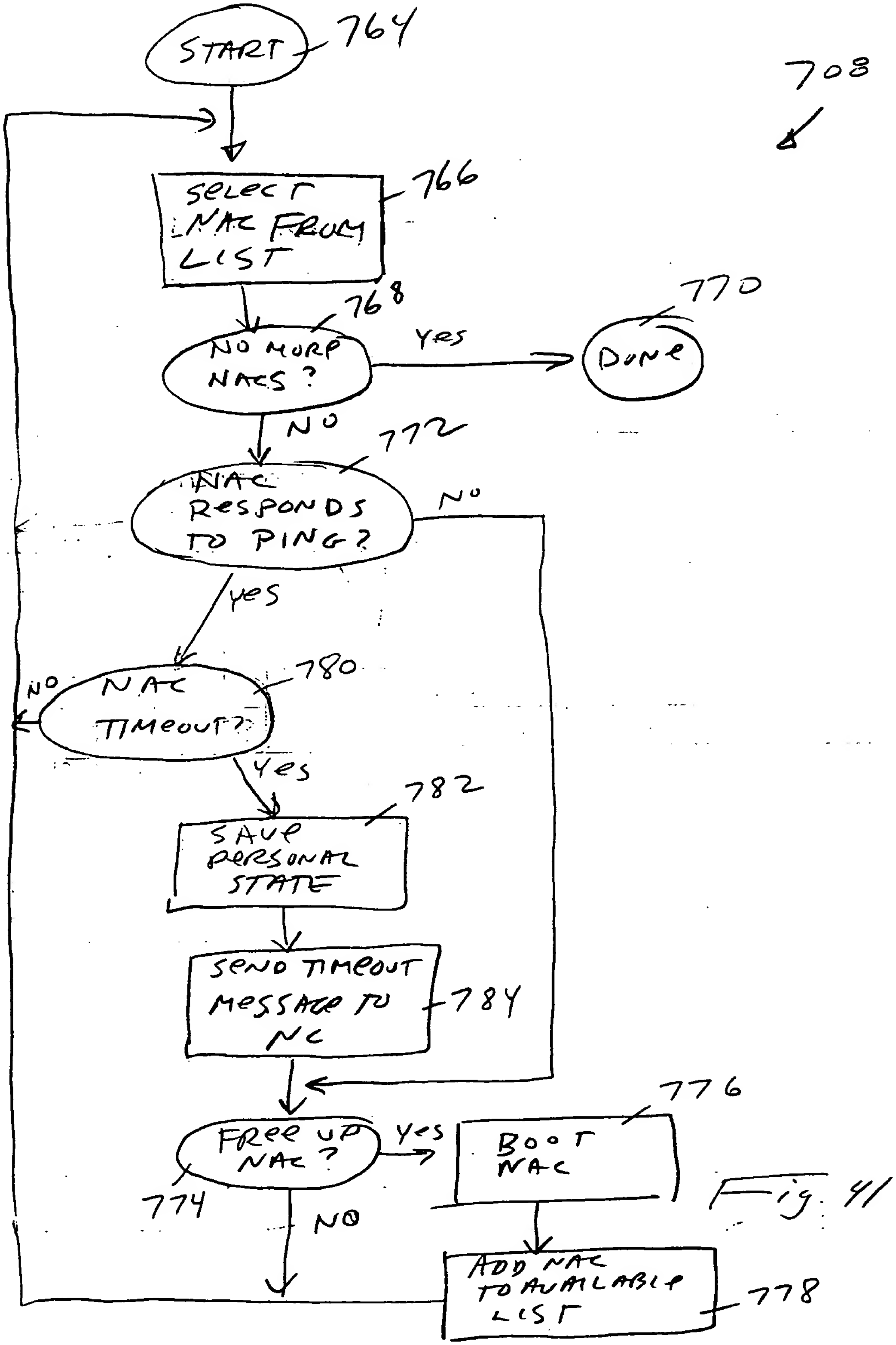

736
START
744
WEB PAGE INPUT?
746
yes
NO
UPDATE WEB PAGE
752
PROCESS OTHER INPUT
748
754
ACTION?
NO
LOAD PERSONAL STATE
REBOOT NAC
SELECT NAC
760
756
DONE
750
REBOOT NAC FROM PERSONAL STATE STORE
SEND REBOOT COMMAND TO NAC
762
GIVE NC ADDRESS TO NAC
GIVE NAC ADDRESS TO NC
758

Fig. 40



START
764
708
SELECT NAC FROM LIST
766
768
NO MORE NACS ?
YES
DONE
770
NO
772
NAC RESPONDS TO PING?
NO
YES
780
NO
NAC TIMEOUT?
YES
782
SAVE PERSONAL STATE
SEND TIMEOUT MESSAGE TO NC
784
776
FREE UP NAC ?
YES
BOOT NAC
774
NO
ADD NAC TO AVAILABLE LIST
778

Fig. 41

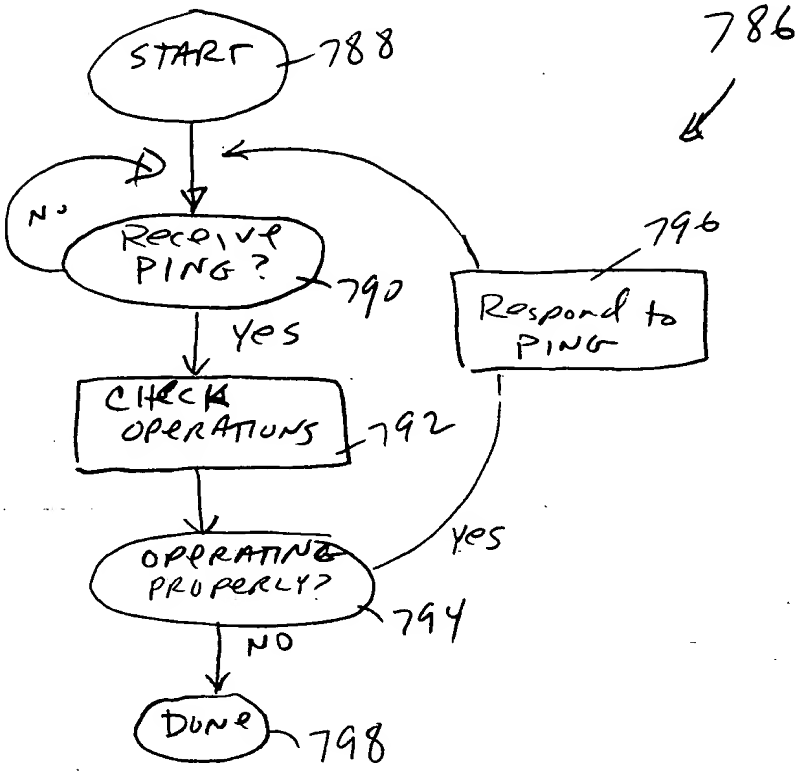

786
START
788
NO
Receive PING?
790
Yes
CHECK OPERATIONS
792
OPERATING PROPERLY?
794
Yes
NO
Done
798
Respond to PING
796

Fig 42